



RESULT 2		RESULT 4	
Q9N6N6	PRELIMINARY; PRT; 66 AA.	Q9NCV4	PRELIMINARY; PRT; 66 AA.
ID	09N6N6;	ID	09NCV4;
AC	09N6N6;	AC	09NCV4;
DT	01-OCT-2000 (TREMBLrel. 15, Created)	DT	01-OCT-2000 (TREMBLrel. 15, Created)
DE	Four-loop conotoxin precursor (Fragment).	DE	Four-loop conotoxin (Fragment).
OS	Conus striatus (Striated cone).	OS	Conus striatus (Striated cone).
OC	Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda; Neogastropoda; Conoidea; Conidae; Conus.	OC	Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda; Neogastropoda; Conoidea; Conidae; Conus.
OX	NCBI_TAXID=6493;	OX	NCBI_TAXID=6493;
RN	[1]	RN	[1]
RP	SEQUENCE FROM N.A.	RP	SEQUENCE FROM N.A.
RC	STRAIN=CSTRH_1_5, AND CSTRH_1_1;	RC	STRAIN=CSTRH_1_2;
RA	Duda T.F., Palumbi S.R.;	RA	Duda T.F., Palumbi S.R.;
RT	"Molecular evolution of four-loop conotoxin precursors from fish-eating Conus.;"	RT	"Molecular evolution of four-loop conotoxin precursors from fish-eating Conus.;"
DR	Submitted (AUG-1999) to the EMBL/GenBank/DDBJ databases.	DR	Submitted (AUG-1999) to the EMBL/GenBank/DDBJ databases.
EMBL	AF174241; AAF89908.1; -.	EMBL	AF174241; AAF89908.1; -.
DR	EMBL; AF174240; AAF89904.1; -.	DR	EMBL; AF174240; AAF89904.1; -.
DR	HSRP; P05484; IMVI.	DR	HSRP; P05484; IMVI.
DR	InterPro; IPR004214; Conotoxin.	DR	InterPro; IPR004214; Conotoxin.
DR	Pfam; PF02950; Conotoxin; 1.	DR	Pfam; PF02950; Conotoxin; 1.
FT	NON_TER 1 1	FT	NON_TER 1 1
SQ	SEQUENCE 66 AA; 6066 MW; 29A992710CA7DA05 CRC64;	SQ	SEQUENCE 66 AA; 6066 MW; 29A992710CA7DA05 CRC64;
Query Match	87.6%; Score 331; DB 5; Length 66;	Query Match	86.5%; Score 327; DB 5; Length 66;
Best Local Similarity	95.5%; Pred. No. 2 5e-35;	Best Local Similarity	93.9%; Pred. No. 8 3e-35;
Matches	63; Conservative 0; Mismatches 3; Indels 0; Gaps 0;	Matches	62; Conservative 1; Mismatches 3; Indels 0; Gaps 0;
QY	6 VVAVAVLITACOLITADDSRGQTQKHALRSRDKLMSMSTRCKGTGKPCSRAYNCCGSC 65	QY	6 VVAVAVLITACOLITADDSRGQTQKHALRSRDKLMSMSTRCKGTGKPCSRAYNCCGSC 65
Db	1 VVAVAVLITACOLITADDSRGQTQKHALRSRDKLMSMSTRCKGTGKPCSRAYNCCGSC 60	Db	1 VVAVAVLITACOLITADDSRGQTQKHALRSRDKLMSMSTRCKGTGKPCSRAYNCCGSC 60
RESULT 3	Q9NCV3	RESULT 5	Q9NCV2
ID	Q9NCV3;	ID	Q9NCV2;
AC	Q9NCV3;	AC	Q9NCV2;
DT	01-OCT-2000 (TREMBLrel. 15, Created)	DT	01-OCT-2000 (TREMBLrel. 15, Created)
DT	01-OCT-2000 (TREMBLrel. 15, Last sequence update)	DT	01-OCT-2000 (TREMBLrel. 15, Last sequence update)
DE	Four-loop conotoxin (Fragment).	DE	Four-loop conotoxin (Fragment).
OS	Conus striatus (Striated cone).	OS	Conus striatus (Striated cone).
OC	Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda; Neogastropoda; Conoidea; Conidae; Conus.	OC	Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda; Neogastropoda; Conoidea; Conidae; Conus.
OX	NCBI_TAXID=6493;	OX	NCBI_TAXID=6493;
RN	[1]	RN	[1]
RP	SEQUENCE FROM N.A.	RP	SEQUENCE FROM N.A.
RC	STRAIN=CSTRH_1_3;	RC	STRAIN=CSTRH_1_4.
RA	Duda T.F., Palumbi S.R.;	RA	Duda T.F., Palumbi S.R.;
RT	"Molecular evolution of four-loop conotoxin precursors from fish-eating Conus.;"	RT	"Molecular evolution of four-loop conotoxin precursors from fish-eating Conus.;"
RT	Submitted (AUG-1999) to the EMBL/GenBank/DDBJ databases.	RT	Submitted (AUG-1999) to the EMBL/GenBank/DDBJ databases.
DR	EMBL; AF174242; AAF89906.1; -.	DR	EMBL; AF174243; AAF89907.1; -.
DR	HSRP; P05484; IMVI.	DR	HSRP; P05484; IMVI.
DR	InterPro; IPR004214; Conotoxin.	DR	InterPro; IPR004214; Conotoxin.
DR	Pfam; PF02950; Conotoxin; 1.	DR	Pfam; PF02950; Conotoxin; 1.
FT	NON_TER 1 1	FT	NON_TER 1 1
SQ	SEQUENCE 66 AA; 7019 MW; 89B89B7AFL17C7B3 CRC64;	SQ	SEQUENCE 66 AA; 7033 MW; 897E401681A7C7B3 CRC64;
Query Match	86.8%; Score 328; DB 5; Length 66;	Query Match	85.7%; Score 324; DB 5; Length 66;
Best Local Similarity	93.9%; Pred. No. 6 2e-35;	Best Local Similarity	92.4%; Pred. No. 2e-34;
Matches	62; Conservative 0; Mismatches 4; Indels 0; Gaps 0;	Matches	62; Conservative 0; Mismatches 4; Indels 0; Gaps 0;
QY	6 VVAVAVLITACOLITADDSRGQTQKHALRSRDKLMSMSTRCKGTGKPCSRAYNCCGSC 65	QY	6 VVAVAVLITACOLITADDSRGQTQKHALRSRDKLMSMSTRCKGTGKPCSRAYNCCGSC 60
Db	1 VVAVAVLITACOLITADDSRGQTQKHALRSRDKLMSMSTRCKGTGKPCSRAYNCCGSC 60	Db	1 VVAVAVLITACOLITADDSRGQTQKHALRSRDKLMSMSTRCKGTGKPCSRAYNCCGSC 60

FT	NON_TER	SEQUENCE	66 AA;	1	1	Matches
QY	6	WVIVAVLLITACQITADDSRGTOKHLRSRDTKLSMSTRCKGTRKPCSRAYNCTGSC	65			
QY	1	WVIVAVLLITACQITADDSRGTOKHLRSRDTKLSMSTRCKGTRKPCSRAYNCTGSC	60			
Db	66	RSGKCG	71			
Db	61	RSGKCG	66			
<b>RESULT 6</b>						
QNCV0		PRELIMINARY;	PRT;	66 AA.		
ID	QNCV0;					
AC	01-OCT-2000 (TREMBlrel. 15, Created)					
DT	01-OCT-2000 (TREMBlrel. 15, Last sequence update)					
DE	Four-loop conotoxin (Fragment).					
OS	Conus striatus (Striated cone).					
OC	Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;					
OX	Neogastropoda; Conoidea; Conidae; Conus.					
RN	[1]					
RP	SEQUENCE FROM N.A.					
RC	STRAIN=CSTRH_1_7;					
RA	Duda T.F., Palumbi S.R.;					
RT	"Molecular evolution of four-loop conotoxin precursors from fish-eating Conus."					
RT	Submitted (AUG-1999) to the EMBL/GenBank/DDBJ databases.					
RL	EMBL: AP174246; AAC89930.1; -.					
DR	HSSP; P05484; IMViC.					
DR	InterPro: IPR004214; Conotoxin.					
DR	PFam: PF02950; Conotoxin; 1.					
FT	NON_TER	1	1			
SQ	SEQUENCE	66 AA;	6981 MW;	20CDC33D7CA7DA05 CRC64;		
<b>Query Match</b>						
Best Local Similarity	85.4%	Score	323;	DB 5;	Length	66;
Matches	92.4%	Pred.	No. 2.	2.7e-34;		
		Mismatches	2;			
		Indels	0;			
		Gaps	0;			
<b>RESULT 7</b>						
QNCV1		PRELIMINARY;	PRT;	66 AA.		
ID	QNCV1;					
AC	01-OCT-2000 (TREMBlrel. 15, Created)					
DT	01-OCT-2000 (TREMBlrel. 15, Last sequence update)					
DT	01-JUN-2002 (TREMBlrel. 21, Last annotation update)					
DE	Four-loop conotoxin (Fragment).					
OS	Conus striatus (Striated cone).					
OC	Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;					
OC	Neogastropoda; Conoidea; Conidae; Conus.					
OX	NCBI_TaxID=6493;					
RN	[1]					
RP	SEQUENCE FROM N.A.					
RC	STRAIN=CSTRH_1_1;					
RC	Duda T.F., Palumbi S.R.;					
RT	"Molecular evolution of four-loop conotoxin precursors from fish-eating Conus."					
RT	Submitted (AUG-1999) to the EMBL/GenBank/DDBJ databases.					
RL	EMBL; AR174267; AAC89931.1; -.					
DR	InterPro: IPR004214; Conotoxin.					
DR	PF02950; Conotoxin; 1.					
FT	NON_TER	1	1			
SQ	SEQUENCE	66 AA;	7057 MW;	E7AA5E310968B7DA CRC64;		
<b>Query Match</b>						
Best Local Similarity	81.7%	Score	309;	DB 5;	Length	66;
Matches	87.9%	Pred.	No. 1.	1.8e-32;		
		Mismatches	58;			
		Indels	0;			
		Gaps	0;			
<b>RESULT 9</b>						
QNCW3		PRELIMINARY;	PRT;	66 AA.		
ID	QNCW3;					
AC	01-OCT-2000 (TREMBlrel. 15, Created)					
DT	01-OCT-2000 (TREMBlrel. 15, Last sequence update)					
DT	01-JUN-2002 (TREMBlrel. 21, Last annotation update)					
DE	Four-loop conotoxin (Fragment).					
OS	Conus catus.					
OC	Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;					
OC	Neogastropoda; Conoidea; Conidae; Conus.					
OX	NCBI_TaxID=101291;					
RN	[1]					
RP	SEQUENCE FROM N.A.					
RC	STRAIN=CCTH_1_7;					
RC	Duda T.F., Palumbi S.R.;					
RT	"Molecular evolution of four-loop conotoxin precursors from fish-eating Conus."					
RT	Submitted (AUG-1999) to the EMBL/GenBank/DDBJ databases.					
RL	EMBL; AR174267; AAC89931.1; -.					
DR	InterPro: IPR004214; Conotoxin.					
DR	PF02950; Conotoxin; 1.					

RT eating Conus.;"  
 RL Submitted (AUG-1999) to the EMBL/GenBank/DBBJ databases.  
 DR EMBL; AF174220; AAF89884.1; -.  
 DR HSSP; P05484; IMVI.  
 DR InterPro; IPR004214; Conotoxin.  
 DR Pfam; PF02950; Conotoxin; 1.  
 FT NON-TER 1 1  
 SQ SEQUENCE 66 AA; 7054 MW; E9FE5E310968A1AC CRC64;  
 Query Match 81.7%; Score 309; DB 5; Length 66;  
 Best Local Similarity 87.9%; Pred. No. 1.8e-32;  
 Matches 58; Conservative 3; Mismatches 5; Indels 0; Gaps 0;  
 DE Four-loop conotoxin precursor (Fragment).  
 QY 6 WVIVAVLILTACOLITADDSSRGTOQKHRAISDTKLMSTRCKGTGKPCSRAYNCCTGSC 65  
 Db 1 WVIVAVLILTACOLITADDSSRGTOQKHRAISDTKLMSTRCKGTGKPCSRAYNCCTGSC 60  
 QY 66 RSGKCG 71  
 Db 61 RSGKCG 66

RESULT 10

Q9N633 PRELIMINARY; PRT; 66 AA.  
 ID Q9N633  
 AC Q9N633;  
 DT 01-OCT-2000 (Tremblrel. 15, Last sequence update)  
 DT 01-OCT-2000 (Tremblrel. 15, Last annotation update)  
 DT 01-JUN-2002 (Tremblrel. 21, Last annotation update)  
 DE Four-loop conotoxin precursor (Fragment).  
 OC Conus catus.  
 OC Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda; .  
 OC Neogastropoda; Conoidea; Conidae; Conus.  
 OX NCBI\_TAXID=101291;  
 RN [1]  
 RP SEQUENCE FROM N.A.  
 RC STRAIN=CCATH\_11\_6; CCATH\_11\_1, AND CCATH\_11\_2;  
 RA Duda, T.F., Palumbi, S.R.;  
 RT "Molecular evolution of four-loop conotoxin precursors from fish-eating Conus.;"  
 RL Submitted (AUG-1999) to the EMBL/GenBank/DBBJ databases.  
 DR EMBL; AF174219; AAF89883.1; -.  
 DR EMBL; AF174214; AAF89878.1; -.  
 DR EMBL; AF174215; AAF89879.1; -.  
 DR HSSP; P05484; IMVI.  
 DR InterPro; IPR004214; Conotoxin.  
 DR Pfam; PF02950; Conotoxin; 1.  
 FT NON-TER 1 1  
 SQ SEQUENCE 66 AA; 7053 MW; E445338A6968A1AC CRC64;

Query Match 80.4%; Score 304; DB 5; Length 66;  
 Best Local Similarity 86.4%; Pred. No. 7.8e-32; 5; Mismatches 4; Indels 0; Gaps 0;  
 Matches 57; Conservative 3; Mismatches 5; Indels 0; Gaps 0;

Db 61 RSGKCG 66

RESULT 12

Q9NCW4 PRELIMINARY; PRT; 66 AA.  
 ID Q9NCW4  
 AC Q9NCW4;  
 DT 01-OCT-2000 (Tremblrel. 15, Last sequence update)  
 DT 01-OCT-2000 (Tremblrel. 15, Last annotation update)  
 DT 01-JUN-2002 (Tremblrel. 21, Last annotation update)  
 DE Four-loop conotoxin (Fragment).  
 OS Conus catus.  
 OC Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda; .  
 OC Neogastropoda; Conoidea; Conidae; Conus.  
 OX NCBI\_TAXID=101291;  
 RN [1]  
 RP SEQUENCE FROM N.A.  
 RC STRAIN=CCATH\_11\_5;  
 RA Duda, T.F., Palumbi, S.R.;  
 RT "Molecular evolution of four-loop conotoxin precursors from fish-eating Conus.;"  
 RL Submitted (AUG-1999) to the EMBL/GenBank/DBBJ databases.  
 DR EMBL; AF174218; AAF89882.1; -.  
 DR HSSP; P05484; IMVI.  
 DR InterPro; IPR004214; Conotoxin.  
 DR Pfam; PF02950; Conotoxin; 1.  
 FT NON-TER 1 1  
 SQ SEQUENCE 66 AA; 6995 MW; E445338A6A7A1AC CRC64;  
 Query Match 80.2%; Score 303; DB 5; Length 66;  
 Best Local Similarity 86.4%; Pred. No. 1e-31; 6; Mismatches 6; Indels 0; Gaps 0;  
 Matches 57; Conservative 3; Mismatches 6; Indels 0; Gaps 0;

QY 6 WVIVAVLILTACOLITADDSSRGTOQKHRAISDTKLMSTRCKGTGKPCSRAYNCCTGSC 65  
 Db 1 WVIVAVLILTACOLITADDSSRGTOQKHRAISDTKLMSTRCKGTGKPCSRAYNCCTGSC 60  
 QY 66 RSGKCG 71  
 Db 61 RSGKCG 66

RESULT 13

Q9NCW1	PRELIMINARY;	PRT;	66 AA.
Q9NCW1;			
AC			
01-OCT-2000 (TREMBLrel. 15, Created)			
01-OCT-2000 (TREMBLrel. 15, Last sequence update)			
01-JUN-2002 (TREMBLrel. 21, Last annotation update)			
DE			
four-loop conotoxin (Fragment)			
OS			
Conus catus.			
OC			
Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;			
Neogastropoda; Conoidea; Conidae; Conus.			
OX			
NCBI_TAXID=101291;			
RN			
[1]			
SEQUENCE FROM N.A.			
RC			
STRAIN=CCATH_11_7;			
RA			
Duda, T.F.; Palumbi, S.R.;			
RT			
*Molecular evolution of four-loop conotoxin precursors from fish-			
eating Conus. ";			
Submitting Conus. ";			
Submitting (AUG-1999) to the EMBL/GenBank/DBJ databases.			
RL			
EMBL; AF174227; AAF89991.1; -.			
DR			
HSSP; P05484; IMVI.			
DR			
InterPro; IPRO04214; Conotoxin.			
DR			
Pfam; PF02950; Conotoxin; 1.			
FT			
NON_TER 1			
SEQUENCE 66 AA; 7066 MW; EA11338A6968B415 CRC64;			
Query Match 79.9%; Score 302; DB 5; Length 66;			
Best Local Similarity 86.4%; Pred. No. 1.4e-31; Matches 57; Conservative 3; Mismatches 6; Indels 0; Gaps 0;			
QY			
6 WVIVAVLILTACQLITANDSRGQTOKHRLRSRDTKLMSMSTRCKGKGKPCSRAYNCCTGSC 65			
1 WVIVAVLILTACQLITANDSRGQTOKHRLRSRDTKLMSMSTRCKGKGKPCSRAYNCCTGSC 60			
DB			
6 RSGKCG 71			
61 RSGRCG 66			
RESULT 14			
Q9NCV5	PRELIMINARY;	PRT;	66 AA.
ID			
Q9NCV5			
AC			
01-OCT-2000 (TREMBLrel. 15, Created)			
DT			
01-OCT-2000 (TREMBLrel. 15, Last sequence update)			
DT			
01-JUN-2002 (TREMBLrel. 21, Last annotation update)			
DE			
four-loop conotoxin (Fragment).			
OS			
Conus catus.			
OC			
Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;			
Neogastropoda; Conoidea; Conidae; Conus.			
OX			
NCBI_TAXID=101291;			
RN			
[1]			
SEQUENCE FROM N.A.			
RP			
STRAIN=CCATH_R_4;			
RA			
Duda, T.F.; Palumbi, S.R.;			
RT			
*Molecular evolution of four-loop conotoxin precursors from fish-			
eating Conus. ";			
Submitting (AUG-1999) to the EMBL/GenBank/DBJ databases.			
RL			
EMBL; AF174228; AAF89902.1; -.			
DR			
HSSP; P05484; IMVI.			
DR			
InterPro; IPRO04214; Conotoxin.			
DR			
Pfam; PF02950; Conotoxin; 1.			
FT			
NON_TER 1			
SEQUENCE 66 AA; 7081 MW; 66E4898A6968B31B CRC64;			
QY			
6 WVIVAVLILTACQLITADDSSRGQTOKHRLRSRDTKLMSMSTRCKGKGKPCSRAYNCCTGSC 65			
1 WVIVAVLILTACQLITANDSRGQTOKHRLRSRDTKLMSMSTRCKGKGKPCSRAYNCCTGSC 60			
DB			
66 RSGRCG 71			
1 WVIVAVLILTACQLITANDSRGQTOKHRLRSRDTKLMSMSTRCKGKGKPCSRAYNCCTGSC 65			
1 WVIVAVLILTACQLITANDSRGQTOKHRLRSRDTKLMSMSTRCKGKGKPCSRAYNCCTGSC 60			
QY			
6 WVIVAVLILTACQLITADDSSRGQTOKHRLRSRDTKLMSMSTRCKGKGKPCSRAYNCCTGSC 65			
1 WVIVAVLILTACQLITANDSRGQTOKHRLRSRDTKLMSMSTRCKGKGKPCSRAYNCCTGSC 60			
QY			
6 WVIVAVLILTACQLITADDSSRGQTOKHRLRSRDTKLMSMSTRCKGKGKPCSRAYNCCTGSC 65			
1 WVIVAVLILTACQLITANDSRGQTOKHRLRSRDTKLMSMSTRCKGKGKPCSRAYNCCTGSC 60			
QY			
66 RSGRCG 71			

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XX Olivera BM, McIntosh JM, Watkins M, Garrett JE, Shon K;  
 PI PT Jacobsen R, Jones RM, Cartier GE;  
 XX WPI; 2002-257318/30.  
 DR N-PSDB; ABL98916.

XX New omega-conopeptides useful for treating disorders associated with  
 PT voltage gated ion channels e.g. pain, inflammation, neurological or  
 PT cardiovascular disorders -

XX P5 Claim 1(c); Page 52; 195pp; English.

XX The invention relates to isolated omega-conopeptides, nucleic acid  
 CC sequences encoding them, and propeptide sequences. The activity of  
 CC the peptides of the invention may be described as, analgesic,  
 CC anticonvulsant, vasotrophic, cardiant, neuroprotective, cerebroprotective,  
 CC cardiovascular, antiinflammatory, antimigraine, antidiabetic,  
 CC tranquiliser, vulnerary, antipsychotic, anxiolytic and neuroleptic.  
 CC Peptides of the invention act by modulating the activity of voltage gated  
 CC ion channels such as neurological disorders, e.g. seizure (associated with epilepsy), neurotoxic injury  
 CC associated with conditions of hypoxia, anoxia, spinal chord trauma, drowning,  
 CC cerebrovascular accident, brain or spinal chord trauma, drowning,  
 CC suffocation, perinatal asphyxia or hypoglycaemic events; pain e.g.  
 CC migraine; inflammation or cardiovascular disorders. They may also be used  
 CC for treating psychiatric disorders e.g. psychosis, anxiety or  
 CC schizophrenia. The analgesic agents of the invention show diminished side  
 CC effects and toxicity, and are non-addictive. The sequences given in  
 CC records ABB96595-ABB96697 represent omega-conopeptide propeptide  
 CC sequences.

XX Sequence 71 AA;

Query Match 100.0%; Score 378; DB 23; Length 71;  
 Best Local Similarity 100.0%; Pred. No. 4.3e-33;  
 Matches 71; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 MKLTCVIVAVULLTACOLITADDSRGTOKHLRSDTKLSMSTRCKGKPCSRIVNC 60  
 Db 1 CTGSCRSKCG 71

XX RESULT 2  
 ID ABB9634  
 ID ABB96634 standard; Peptide; 71 AA.

XX AC ABB96634;  
 AC

XX DT 12-JUL-2002 (first entry)

DE Omega-conopeptide Cn6.7 propeptide.

XX Omega-conopeptide; analgesic; anticonvulsant; vasotrophic; cardiant;  
 KW neuroprotective; cerebroprotective; cardiovascular; antiinflammatory;  
 KW antimigraine; antidiabetic; tranquiliser; vulnerary; antipsychotic;  
 KW anxiolytic; neuroleptic; voltage gated ion channel; seizure; epilepsy;  
 KW neurologic disorder; neurotoxic injury; hypoxia; anoxia; ischaemia;  
 KW stroke; cerebrovascular accident; brain trauma; spinal chord trauma;  
 KW drowning; suffocation; perinatal asphyxia; hypoglycaemic event; pain;  
 KW migraine; inflammation; cardiovascular disorder; psychiatric disorder;  
 KW psychosis; anxiety; schizophrenia.

XX Conus consors.

XX WO200207675-A2.

XX PD 31-JAN-2002.

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XX 23-JUL-2001; 2001WO-US23041.  
 XF 21-JUL-2000; 2000US-219616P.  
 XX 05 FEB-2001; 2001US-265888P.  
 XX (UTAH ) UNIV UTAH RES FOUND.  
 PA (COGN ) COGNEX INC.  
 XX Olivera BM, McIntosh JM, Watkins M, Garrett JE, Shon K;  
 PI PT Jacobsen R, Jones RM, Cartier GE;  
 XX WPI; 2002-257318/30.  
 DR N-PSDB; ABL9893.

XX New omega-conopeptides useful for treating disorders associated with  
 PT voltage gated ion channels e.g. pain, inflammation, neurological or  
 PT cardiovascular disorders -

XX P5 Claim 1(c); Page 40; 195pp; English.

XX The invention relates to isolated omega-conopeptides, nucleic acid  
 CC sequences encoding them, and propeptide sequences. The activity of  
 CC the peptides of the invention may be described as, analgesic,  
 CC anticonvulsant, vasotrophic, cardiant, neuroprotective, cerebroprotective,  
 CC cardiovascular, antiinflammatory, antimigraine, antidiabetic,  
 CC tranquiliser, vulnerary, antipsychotic, anxiolytic and neuroleptic.  
 CC Peptides of the invention act by modulating the activity of voltage gated  
 CC ion channels. They may be used for treating or preventing disorders  
 CC associated with voltage gated ion channels such as neurological  
 CC disorders, e.g. seizure (associated with epilepsy), neurotoxic injury  
 CC associated with conditions of hypoxia, anoxia, ischaemia, stroke,  
 CC cerebrovascular accident, brain or spinal chord trauma, drowning,  
 CC suffocation, perinatal asphyxia or hypoglycaemic events, pain e.g.  
 CC migraine; inflammation or cardiovascular disorders. They may also be used  
 CC for treating psychiatric disorders e.g. psychosis, anxiety or  
 CC schizophrenia. The analgesic agents of the invention show diminished side  
 CC effects and toxicity, and are non-addictive. The sequences given in  
 CC records ABB96595-ABB96697 represent omega-conopeptide propeptide  
 CC sequences.

XX Sequence 71 AA;

Query Match 99.7%; Score 377; DB 23; Length 71;  
 Best Local Similarity 98.6%; Pred. No. 5.5e-33;  
 Matches 70; Conservative 1; Mismatches 0; Indels 0; Gaps 0;

QY 1 MKLTCVIVAVULLTACOLITADDSRGTOKHLRSDTKLSMSTRCKGKPCSRIVNC 60  
 Db 1 CTGSCRSKCG 71

XX RESULT 3  
 ID ABB9629  
 ID ABB9629 standard; Peptide; 71 AA.

XX AC ABB9629;  
 XX DT 12-JUL-2002 (first entry)

DE Omega-conopeptide Cn6.2 propeptide.

XX Omega-conopeptide; analgesic; anticonvulsant; vasotrophic; cardiant;  
 KW neuroprotective; cerebroprotective; cardiovascular; antiinflammatory;  
 KW antimigraine; antidiabetic; tranquiliser; vulnerary; antipsychotic;  
 KW anxiolytic; neuroleptic; voltage gated ion channel; seizure; epilepsy;  
 KW neurologic disorder; neurotoxic injury; hypoxia; anoxia; ischaemia;  
 KW stroke; cerebrovascular accident; brain trauma; spinal chord trauma;  
 KW drowning; suffocation; perinatal asphyxia; hypoglycaemic event; pain;

KW migraine; inflammation; cardiovascular disorder; psychiatric disorder;  
 KW psychosis; anxiety; schizophrenia.  
 OS Conus consors.  
 XX WO200207675-A2.  
 PD 31-JAN-2002.  
 XX 21-JUL-2001; 2001WO-US23041.  
 PR 05-FEB-2001; 2001US-265888P.  
 XX (UTAH ) UNIV UTAH RES FOUND.  
 PA (COGN- ) COGNETIX INC.  
 XX  
 PT Olivera BM, McIntosh JM, Watkins M, Garrett JE, Shon K;  
 PI Jacobson R, Jones RM, Cartier GE;  
 XX WPI: 2002-257318/30.  
 DR N-PSDB; ABL98888.  
 XX  
 PT New omega-conopeptides useful for treating disorders associated with  
 voltage gated ion channels e.g. pain, inflammation, neurological or  
 cardiovascular disorders -  
 XX  
 PS Claim 1(c); Page 38; 195PP; English.  
 XX  
 CC The invention relates to isolated omega-conopeptides, nucleic acid  
 sequences encoding them, and propeptide sequences. The activity of  
 the peptides of the invention may be described as, analgesic,  
 anticonvulsant, vasotrop, cardiotropic, neuroprotective, cerebroprotective,  
 cardiovascular, antiinflammatory, antimigraine, antidiabetic,  
 tranquiliser, vulnerary, antipsychotic, anxiolytic and neuroleptic.  
 CC Peptides of the invention act by modulating the activity of voltage gated  
 ion channels. They may be used for treating or preventing disorders  
 associated with voltage gated ion channels such as neurological  
 disorders, e.g. seizure (associated with epilepsy), neurotoxic injury  
 associated with conditions of hypoxia, anoxia, ischaemia, stroke,  
 cerebrovascular accident, brain or spinal chord trauma, drowning,  
 suffocation, paroxysmal asphyxia or hypoglycaemic events; pain e.g.  
 migraine; inflammation or cardiovascular disorders. They may also be used  
 for treating psychiatric disorders e.g. psychosis, anxiety or  
 schizophrenia. The analgesic agents of the invention show diminished side  
 effects and toxicity and are non-addictive. The sequences given in  
 records ABB96595-ABB96697 represent omega-conopeptide propeptide  
 sequences.  
 XX  
 SQ Sequence 71 AA;  
 Query Match 99.5%; Score 376; DB 23; Length 71;  
 Best Local Similarity 98.6%; Pred. No. 7e-33;  
 Matches 70; Conservative 1; Mismatches 0; Indels 0; Gaps 0;  
 Oy 1 MKLTCAVIVAVLILTACQLITADDSRGQTOKHRLSDTKLMSMSTRKGTGKPCSRAYNC 60  
 Db 1 MKLTCAVIVAVLILTACQLITADDSRGQTOKHRLSDTKLMSMSTRKGTGKPCSRAYNC 60  
 Oy 61 CTGSCRSRGKCG 71  
 Db 61 CTGSCRSRGKCG 71  
 XX  
 SQ Sequence 71 AA;  
 Query Match 95.0%; Score 359; DB 23; Length 71;  
 Best Local Similarity 95.0%; Pred. No. 4.5e-31;  
 Matches 68; Conservative 0; Mismatches 3; Indels 0; Gaps 0;  
 Oy 1 MKLTCAVIVAVLILTACQLITADDSRGQTOKHRLSDTKLMSMSTRKGTGKPCSRAYNC 60  
 Db 1 MKLTCAVIVAVLILTACQLITADDSRGQTOKHRLSDTKLMSMSTRKGTGKPCSRAYNC 60  
 Oy 61 CTGSCRSRGKCG 71  
 Db 61 CTGSCRSRGKCG 71  
 XX  
 DE Omega-conopeptide S5.3 propeptide.  
 RESULT 4  
 ID ABB96680  
 ID ABB96680 standard; Peptide: 71 AA.  
 AC ABB96680;  
 XX  
 DT 12-JUL-2002 (first entry)  
 DE Omega-conopeptide S5.3 propeptide.  
 RESULT 5

AY87541	ID	ABB96607	standard; Peptide; 71 AA.
ID	XX	XX	AY87541 standard; protein; 71 AA.
AC	XX	XX	AY87541;
XX	XX	XX	18-JUL-2000 (first entry)
DT	DE	DE	Conotoxin peptide #11 precursor.
XX	XX	XX	Conotoxin precursor; brocade cone shell; line cone shell; drug screening;
XX	KW	KW	neurotoxin inhibitor; muscle inhibitor; analgesic.
OS	XX	KW	Conus sp.
Key	Location/Qualifiers	FT	Misc-difference 6 /note- "Encoded by ATG"
FT	XX	XX	psychosis; anxiety; schizophrenia.
XX	OS	XX	Conus aurisiacus.
PN	XX	XX	Conus aurisiacus.
XX	XX	XX	08-DEC-1999.
PD	XX	XX	30-APR-1999; 99CN-0106070.
XX	PR	XX	30-APR-1999; 99CN-0106070.
PA	XX	XX	(BIOL-) BIOLOGICAL ENG INST ACAD MILITARY MEDICI.
XX	PI	XX	Lu B, Huang P;
XX	PS	XX	WPI; 2000-351193/31.
DR	DR	XX	N-PSDB; AAA10463.
XX	PT	XX	Conotoxin peptide from brocade cone shells useful as analgesic -
XX	PS	XX	Claim 1A; Page 5-6, 20pp; Chinese.
XX	CC	XX	The invention relates to 14 novel mature conotoxin peptides from marine
CC	CC	CC	snails (Conus species); conotoxin precursor proteins; and cDNAs
CC	CC	CC	encoding the conotoxin precursors. The mature peptide sequences were
CC	CC	CC	discovered by obtaining conotoxin cDNA sequences from mRNA from the
CC	CC	CC	brocade cone shell (Conus textile) or the line cone shell (Conus
CC	CC	CC	striatus). The cDNA sequences were used to determine the conotoxin
CC	CC	CC	precursor protein sequences, and the sequences of the mature conotoxin
CC	CC	CC	peptides were inferred from the precursor sequences. The mature
CC	CC	CC	conotoxin peptides can be obtained via chemical synthesis or by in vitro
CC	CC	CC	gene expression. Conotoxins inhibit the function of neurons and muscle
CC	CC	CC	cells. Certain conotoxins interfere with synaptic transmission, while
CC	CC	CC	others act on muscle or at the neuromuscular junction. The 14 novel
CC	CC	CC	conotoxins have unique receptor specificity and affinity, so can be
CC	CC	CC	used as screening tools to identify new drugs. Conotoxin #11 (AY87540)
CC	CC	CC	may be used for pain relief. Sequences AAY87421, AAY87523, AAY87525,
CC	CC	CC	AY87527, AAY87529, AAY87531, AAY87533, AAY87537, AY87539,
CC	CC	CC	AY87541, AAY87543, AAY87545 and AAY87547 represent the precursors of
CC	CC	CC	conotoxins #1-#14, respectively.
XX	SQ	XX	Sequence 71 AA;
Query	Match	94.2%	Score 356; DB 21; Length 71;
Best	Local	94.4%	Similarity Pred. No. 9.5e-31; Length 71;
Matches	67; Conservative	0; Mismatches 4; Indels 0; Gaps 0;	
QY	1	MKLTCVIVAVULLTACQLITADDSSGTQKHLRSKTKMSSTRCKGKPCSRAYNC	60
Db	1	MKLTCVIVAVULLTACQLITADDSSGTQKHLRSKTKMSSTRCKAACKPCSRAYNC	60
RESULT	6	61	CTGSCRGKCG 71
ABE96607	61	CTGSCRGKCG 71	
Query	Match	93.1%	Score 352; DB 23; Length 71;
Best	Local	93.0%	Similarity Pred. No. 2.5e-30; Length 71;
Matches	66; Conservative	2; Mismatches 3; Indels 0; Gaps 0;	
QY	1	MKLTCVIVAVULLTACQLITADDSSGTQKHLRSKTKMSSTRCKGKPCSRAYNC	60
Db	1	MKLTCVIVAVULLTACQLITADDSSGTQKHLRSKTKMSSTRCKGKPCSRAYNC	60

QY 61 CTGSCSGKCG 71  
 XX |||||||  
 Db 61 CTGSCSGKCG 71

RESULT 7  
 ABB96661  
 ID ABB96661 standard; Peptide: 71 AA.  
 XX  
 AC ABB96661;  
 XX  
 DT 12-JUL-2002 ( first entry)  
 XX  
 DE Omega-conopeptide Mn6.1 propeptide.  
 XX  
 KW Omega-conopeptide; analgesic; anticonvulsant; vasotropic; cardiant; neuroprotective; cerebroprotective; cardiovascular; antiinflammatory; antinigraine; antidiabetic; tranquiliser; vuninary; antipsychotic; anxiolytic; neuroleptic; voltage gated ion channel; seizure; epilepsy; neurotoxic; neurovascular accident; neurotoxic injury; hypoxia; anoxia; ischaemia; stroke; cerebrovascular accident; brain trauma; spinal chord trauma; drowning; suffocation; perinatal asphyxia; hypoglycaemic event; pain; migraine; inflammation; cardiovascular disorder; psychiatric disorder; psychosis; anxiety; schizophrenia.  
 OS Conus monachus.  
 XX  
 WO200207675-A2.  
 PR 05-FEB-2001; 2001US-265888P.  
 PR 21-JUL-2000; 2000US-219616P.  
 PR 23-JUL-2001; 2001WO-US23041.  
 XX  
 PA (UTAH ) UNIV UTAH RES FOUND.  
 PA (COGN-) COGNETIX INC.  
 XX  
 PI Olivera BM, McIntosh JM, Watkins M, Garrett JE, Shon K;  
 PI Jacobsen R, Jones RM, Cartier GE;  
 XX  
 DR WPI: 2002-257318/30.  
 DR N-PSDB; ABL98920.

PT New omega-conopeptides useful for treating disorders associated with voltage gated ion channels e.g. pain, inflammation, neurological or cardiovascular disorders -  
 PT  
 PT  
 PS

Claim 1(c): Page 53; 195pp; English.

The invention relates to isolated omega-conopeptides, nucleic acid sequences encoding them, and propeptide sequences. The activity of the peptides of the invention may be described as, analgesic, anticonvulsant, vunotropic, cardiant, neuroprotective, cerebroprotective, cardiovascular, antiinflammatory, antimigraine, antidiabetic, tranquiliser, vuninary, antipsychotic, anxiolytic and neuroleptic. Peptides of the invention act by modulating the activity of voltage gated ion channels. They may be used for treating or preventing disorders associated with voltage gated ion channels such as neurological disorders, e.g. seizure (associated with epilepsy), neurotoxic injury associated with conditions of hypoxia, anoxia, ischaemia, stroke, cardiovascular accident, brain or spinal chord trauma, drowning, suffocation, perinatal asphyxia or hypoglycaemic events; pain e.g. migraine; inflammation or cardiovascular disorders. They may also be used for treating psychiatric disorders e.g. psychosis, anxiety or schizophrenia. The analgesic agents of the invention show diminished side effects and toxicity, and are non-addictive. The sequences given in sequences, CC records ABB96595-ABB96697 represent omega-conopeptide propeptide sequences.

Sequence 71 AA;

QY 61 CTGSCSGKCG 71  
 XX |||||||  
 Db 61 CTGSCSGKCG 71

RESULT 8  
 ABB9609  
 ID ABB9609 standard; Peptide: 71 AA.  
 XX  
 AC ABB9609;  
 XX  
 DT 12-JUL-2002 ( first entry)  
 XX  
 DE Omega-conopeptide Ay6.3 propeptide.  
 XX  
 KW Omega-conopeptide; analgesic; anticonvulsant; vasotropic; cardiant; neuroprotective; cerebroprotective; cardiovascular; antiinflammatory; antinigraine; antidiabetic; tranquiliser; vuninary; antipsychotic; anxiolytic; neuroleptic; voltage gated ion channel; seizure; epilepsy; neurological disorder; neurotoxic injury; hypoxia; anoxia; ischaemia; stroke; cerebrovascular accident; brain trauma; spinal chord trauma; drowning; suffocation; perinatal asphyxia; hypoglycaemic event; pain; migraine; inflammation; cardiovascular disorder; psychiatric disorder; psychosis; anxiety; schizophrenia.  
 OS Conus aurisiacus.  
 XX  
 PN WO200207675-A2.  
 PD 31-JAN-2002.  
 XX  
 PR 23-JUL-2001; 2001WO-US23041.  
 XX  
 PR 21-JUL-2000; 2000US-219616P.  
 PR 05-FEB-2001; 2001US-265888P.  
 XX  
 PA (UTAH ) UNIV UTAH RES FOUND.  
 PA (COGN-) COGNETIX INC.  
 XX  
 PI Olivera BM, McIntosh JM, Watkins M, Garrett JE, Shon K;  
 PI Jacobsen R, Jones RM, Cartier GE;  
 XX  
 DR WPI: 2002-257318/30.  
 DR N-PSDB; ABL98869.

PT New omega-conopeptides useful for treating disorders associated with voltage gated ion channels e.g. pain, inflammation, neurological or cardiovascular disorders -  
 PT  
 PS

Claim 1(c): Page 29; 195pp; English.

The invention relates to isolated omega-conopeptides, nucleic acid sequences encoding them, and propeptide sequences. The activity of the peptides of the invention may be described as, analgesic, anticonvulsant, vunotropic, cardiant, neuroprotective, cerebroprotective, cardiovascular, antiinflammatory, antimigraine, antidiabetic, tranquiliser, vuninary, antipsychotic, anxiolytic and neuroleptic. Peptides of the invention act by modulating the activity of voltage gated ion channels. They may be used for treating or preventing disorders associated with voltage gated ion channels such as neurological disorders, e.g. seizure (associated with epilepsy), neurotoxic injury associated with conditions of hypoxia, anoxia, ischaemia, stroke, cardiovascular accident, brain or spinal chord trauma, drowning, suffocation, perinatal asphyxia or hypoglycaemic events; pain e.g. migraine; inflammation or cardiovascular disorders. They may also be used for treating psychiatric disorders e.g. psychosis, anxiety or schizophrenia. The analgesic agents of the invention show diminished side effects and toxicity, and are non-addictive. The sequences given in sequences, CC records ABB96595-ABB96697 represent omega-conopeptide propeptide sequences.

Sequence 71 AA;

QY 61 CTGSCSGKCG 71  
 XX |||||||  
 Db 61 CTGSCSGKCG 71

Query Match 92.6%; Score 350; DB 23; Length 71;  
 Best Local Similarity 94.4%; Pred. No. 4.1e-30;  
 Matches 67; Conservative 1; Mismatches 3; Indels 0; Gaps 0;

QY 1 MKLTCVIVAVILLPQLTADDSRGTOKRHALRSDTKLSMSTCKGTCRKPSCSRIVAYNC 60  
 ID 1 MKLTSVIVAVILLTACQLITADDSTGTOKRHALRSDTKLSISTRCKSTGKCSRIVAYNC 60  
 XX  
 AC ABB96661;  
 XX  
 DT 12-JUL-2002 ( first entry)  
 XX  
 DE Omega-conopeptide Mn6.1 propeptide.  
 XX  
 KW Omega-conopeptide; analgesic; anticonvulsant; vasotropic; cardiant; neuroprotective; cerebroprotective; cardiovascular; antiinflammatory; antinigraine; antidiabetic; tranquiliser; vuninary; antipsychotic; anxiolytic; neuroleptic; voltage gated ion channel; seizure; epilepsy; neurological disorder; neurotoxic injury; hypoxia; anoxia; ischaemia; stroke; cerebrovascular accident; brain trauma; spinal chord trauma; drowning; suffocation; perinatal asphyxia; hypoglycaemic event; pain; migraine; inflammation; cardiovascular disorder; psychiatric disorder; psychosis; anxiety; schizophrenia.  
 OS Conus monachus.  
 XX  
 WO200207675-A2.  
 PR 05-FEB-2001; 2001US-265888P.  
 PR 21-JUL-2000; 2000US-219616P.  
 PR 23-JUL-2001; 2001WO-US23041.  
 XX  
 PA (UTAH ) UNIV UTAH RES FOUND.  
 PA (COGN-) COGNETIX INC.  
 XX  
 PI Olivera BM, McIntosh JM, Watkins M, Garrett JE, Shon K;  
 PI Jacobsen R, Jones RM, Cartier GE;  
 XX  
 DR WPI: 2002-257318/30.  
 DR N-PSDB; ABL98869.

PT New omega-conopeptides useful for treating disorders associated with voltage gated ion channels e.g. pain, inflammation, neurological or cardiovascular disorders -  
 PT  
 PS

Claim 1(c): Page 29; 195pp; English.

The invention relates to isolated omega-conopeptides, nucleic acid sequences encoding them, and propeptide sequences. The activity of the peptides of the invention may be described as, analgesic, anticonvulsant, vunotropic, cardiant, neuroprotective, cerebroprotective, cardiovascular, antiinflammatory, antimigraine, antidiabetic, tranquiliser, vuninary, antipsychotic, anxiolytic and neuroleptic. Peptides of the invention act by modulating the activity of voltage gated ion channels. They may be used for treating or preventing disorders associated with voltage gated ion channels such as neurological disorders, e.g. seizure (associated with epilepsy), neurotoxic injury associated with conditions of hypoxia, anoxia, ischaemia, stroke, cardiovascular accident, brain or spinal chord trauma, drowning, suffocation, perinatal asphyxia or hypoglycaemic events; pain e.g. migraine; inflammation or cardiovascular disorders. They may also be used for treating psychiatric disorders e.g. psychosis, anxiety or schizophrenia. The analgesic agents of the invention show diminished side effects and toxicity, and are non-addictive. The sequences given in sequences, CC records ABB96595-ABB96697 represent omega-conopeptide propeptide sequences.

Sequence 71 AA;

QY 61 CTGSCSGKCG 71  
 XX |||||||  
 Db 61 CTGSCSGKCG 71

Query Match 92.6%; Score 350; DB 23; Length 71;  
 Best Local Similarity 94.4%; Pred. No. 4.1e-30;  
 Matches 67; Conservative 1; Mismatches 3; Indels 0; Gaps 0;

QY 1 MKLTCVIVAVILLPQLTADDSRGTOKRHALRSDTKLSMSTCKGTCRKPSCSRIVAYNC 60  
 ID 1 MKLTSVIVAVILLTACQLITADDSTGTOKRHALRSDTKLSISTRCKSTGKCSRIVAYNC 60  
 XX  
 AC ABB96661;  
 XX  
 DT 12-JUL-2002 ( first entry)  
 XX  
 DE Omega-conopeptide Ay6.3 propeptide.  
 XX  
 KW Omega-conopeptide; analgesic; anticonvulsant; vasotropic; cardiant; neuroprotective; cerebroprotective; cardiovascular; antiinflammatory; antinigraine; antidiabetic; tranquiliser; vuninary; antipsychotic; anxiolytic; neuroleptic; voltage gated ion channel; seizure; epilepsy; neurological disorder; neurotoxic injury; hypoxia; anoxia; ischaemia; stroke; cerebrovascular accident; brain trauma; spinal chord trauma; drowning; suffocation; perinatal asphyxia; hypoglycaemic event; pain; migraine; inflammation; cardiovascular disorder; psychiatric disorder; psychosis; anxiety; schizophrenia.  
 OS Conus aurisiacus.  
 XX  
 PN WO200207675-A2.  
 PD 31-JAN-2002.  
 XX  
 PR 23-JUL-2001; 2001WO-US23041.  
 XX  
 PR 21-JUL-2000; 2000US-219616P.  
 PR 05-FEB-2001; 2001US-265888P.  
 XX  
 PA (UTAH ) UNIV UTAH RES FOUND.  
 PA (COGN-) COGNETIX INC.  
 XX  
 PI Olivera BM, McIntosh JM, Watkins M, Garrett JE, Shon K;  
 PI Jacobsen R, Jones RM, Cartier GE;  
 XX  
 DR WPI: 2002-257318/30.  
 DR N-PSDB; ABL98869.

PT New omega-conopeptides useful for treating disorders associated with voltage gated ion channels e.g. pain, inflammation, neurological or cardiovascular disorders -  
 PT  
 PS

Claim 1(c): Page 29; 195pp; English.

The invention relates to isolated omega-conopeptides, nucleic acid sequences encoding them, and propeptide sequences. The activity of the peptides of the invention may be described as, analgesic, anticonvulsant, vunotropic, cardiant, neuroprotective, cerebroprotective, cardiovascular, antiinflammatory, antimigraine, antidiabetic, tranquiliser, vuninary, antipsychotic, anxiolytic and neuroleptic. Peptides of the invention act by modulating the activity of voltage gated ion channels. They may be used for treating or preventing disorders associated with voltage gated ion channels such as neurological disorders, e.g. seizure (associated with epilepsy), neurotoxic injury associated with conditions of hypoxia, anoxia, ischaemia, stroke, cardiovascular accident, brain or spinal chord trauma, drowning, suffocation, perinatal asphyxia or hypoglycaemic events; pain e.g. migraine; inflammation or cardiovascular disorders. They may also be used for treating psychiatric disorders e.g. psychosis, anxiety or schizophrenia. The analgesic agents of the invention show diminished side effects and toxicity, and are non-addictive. The sequences given in sequences, CC records ABB96595-ABB96697 represent omega-conopeptide propeptide sequences.

Sequence 71 AA;



CC from C. *geographus*. These conotoxins target presynaptic calcium channels and have largely overlapping specificities for different calcium targets in neuronal tissue preparations. These peptides form a four loop folded toxin molecule with a specific arrangement of cysteines referred to as the omega pattern. The cysteine framework of these two peptides differs only in the exact amino acid spacing of the two carboxy terminal inter-Cys domains. Beyond the similarity of the framework the two peptides are remarkably divergent. Only nine of the 21 non-Cys amino acids of the omega-GVIA are conserved in the omega-MVIIA. MVIIA and GVIA template domains are each 45 amino acids in length. They also show a >90% conservation of amino acid sequence with only 4 amino acid non-identity. These two sequences illustrate the existence of two highly conserved template domains associated with two structurally dissimilar toxins.

CC Sequence 71 AA;

Query Match 85.7%; Score 324; DB 14; Length 71; Best Local Similarity 85.9%; Pred. No. 2.4e-27; Matches 61; Conservative 2; Mismatches 8; Indels 0; Gaps 0;

Qy 1 MKLTCVVTAVLLTACOLITADDSRGTRGOKHRLRSRDKLMSMSTRCKKGASCHRTSDC 60  
Db 1 MKLTCVVTAVLLTACOLITADDSRGTRGOKHRLRSRDKLMSMSTRCKKGASCHRTSDC 60

RESULT 11

ABB9662  
ID ABB9662 standard; Peptide: 71 AA.

XX  
AC ABB9662;  
XX  
DT 12-JUL-2002 (first entry)

XX  
DE Omega-conopeptide Mn6.2 propeptide.

XX  
KW Omega-conopeptide; analgesic; anticonvulsant; vasotropic; cardiant; neuroprotective; cerebroprotective; cardiovascular; antiinflammatory; antimigraine; antidiabetic; tranquiliser; vulnary; antipsychotic; anxiolytic; neuroleptic; anticonvulsant; epilepsy; neurotoxic; neuroleptic; neurotoxic; hypoxia; anoxia; ischaemia; stroke; cerebrovascular accident; brain trauma; spinal chord trauma; drowning; suffocation; perinatal asphyxia; hypoglycaemic event; pain; migraine; inflammation; cardiovascular disorder; psychiatric disorder; psychosis; anxiety; schizophrenia.

OS Conus monachus.  
PN WO200207675 A2.  
XX  
PD 31-JAN-2002.  
XX  
PF 23-JUL-2001; 2001WO-US23041.  
XX  
PR 21-JUL-2000; 2000US-219616P.  
PR 05-FEB-2001; 2001US-265888P.  
XX  
PA (UTAH ) UNIV UTAH RES FOUND.  
PA (COGN-) COGNETIX INC.

XX  
PI Jacobson, R., Jones, RM., Carrier, GE;  
XX  
PR WPI; 2002-257318/30.  
DR N-PSDB; ABL98921.  
XX  
PT New omega-conopeptides useful for treating disorders associated with voltage gated ion channels e.g. pain, inflammation, neurological or cardiovascular disorders -

XX  
PS Claim 1(c); Page 54; 195pp; English.

XX  
CC The invention relates to isolated omega-conopeptides, nucleic acid sequences encoding them, and propeptide sequences. The activity of the peptides of the invention may be described as, analgesic, anticonvulsant, vasotropic, cardiant, neuroprotective, cerebroprotective, cardiovascular, antiinflammatory, antimigraine, antidiabetic, tranquiliser, vulnary, antipsychotic, anxiolytic and neuroleptic. Peptides of the invention act by modulating the activity of voltage gated ion channels. They may be used for treating or preventing disorders associated with voltage gated ion channels such as neurological disorders, e.g. seizure (associated with epilepsy), neurotoxic injury associated with conditions of hypoxia, anoxia, ischaemia, stroke, cerebrovascular accident, brain or spinal chord trauma, drowning, suffocation, perinatal asphyxia or hypoglycaemic events; pain e.g. migraine; inflammation or cardiovascular disorders. They may also be used for treating psychiatric disorders e.g. psychosis, anxiety or schizophrenia. The analgesic agents of the invention show diminished side effects and toxicity, and are non-addictive. The sequences given in records ABB96595-ABB96697 represent omega-conopeptide propeptide sequences.

XX  
CC Sequence 71 AA;

Query Match 85.7%; Score 324; DB 23; Length 71; Best Local Similarity 87.3%; Pred. No. 2.4e-27; Matches 62; Conservative 0; Mismatches 9; Indels 0; Gaps 0;

Qy 1 MKLTCVVTAVLLTACOLITADDSRGTRGOKHRLRSRDKLMSMSTRCKKGKGKPCSRIVNC 60  
Db 1 MKLTCVVTAVLLTACOLITADDSRGTRGOKHRLRSRDKLMSMSTRCKKGKGKPCSRIVNC 60

RESULT 12

ABB96659  
ID ABB96659 standard; Peptide: 71 AA.

XX  
AC ABB96659;  
XX  
DT 12-JUL-2002 (first entry)

DE Omega-conopeptide w-MVIIB propeptide.

XX  
KW Omega-conopeptide; analgesic; anticonvulsant; vasotropic; cardiant; neuroprotective; cerebroprotective; cardiovascular; antiinflammatory; antimigraine; antidiabetic; tranquiliser; vulnary; antipsychotic; anxiolytic; neuroleptic; voltage gated ion channel; seizure; epilepsy; neurotoxic; neuroleptic; neurotoxic; hypoxia; anoxia; ischaemia; stroke; cerebrovascular accident; brain trauma; spinal chord trauma; drowning; suffocation; perinatal asphyxia; hypoglycaemic event; pain; migraine; inflammation; cardiovascular disorder; psychiatric disorder; psychosis; anxiety; schizophrenia.

OS Conus magus.  
XX  
PN WO200207675 A2.  
XX  
PD 31-JAN-2002.  
XX  
PF 23-JUL-2001; 2001WO-US23041.  
XX  
PR 21-JUL-2000; 2000US-219616P.  
PR 05-FEB-2001; 2001US-265888P.  
XX  
PA (UTAH ) UNIV UTAH RES FOUND.  
PA (COGN-) COGNETIX INC.

XX  
PT Olivera, BM., McIntosh, JM., Watkins, M., Garrett, JE., Shon, K.;  
XX  
PR WPI; 2002-257318/30.  
DR N-PSDB; ABL98921.  
XX  
PT New omega-conopeptides useful for treating disorders associated with voltage gated ion channels e.g. pain, inflammation, neurological or cardiovascular disorders -



XX Conus circumcisus.  
 OS KW neuroprotective; cerebroprotective; cardiovascular; antiinflammatory;  
 XX KW antinigraine; antidiabetic; tranquilliser; vulnerary; antipsychotic;  
 PN WO200207675-A2.  
 XX KW anxiolytic; neuroleptic; voltage gated ion channel; seizure; epilepsy;  
 PD 31-JAN-2002.  
 XX KW neurological disorder; neurotoxic; injury; hypoxia; anoxia; ischaemia;  
 XX KW stroke; cerebrovascular accident; brain trauma; spinal chord trauma;  
 XX KW drowning; suffocation; perinatal asphyxia; hypoglycaemic event; pain;  
 PR 21-JUL-2000; 2000US-219616P.  
 XX KW migraine; inflammation; cardiovascular disorder; psychiatric disorder;  
 PR 05-FEB-2001; 2001US-265888P.  
 XX KW psychosis; anxiety; schizophrenia.  
 XX Conus stercusmuscarum.  
 PN WO200207675-A2.  
 PA (UTAH ) UNIV UTAH RES FOUND.  
 PA (COGN- ) COGNETIX INC.  
 XX PD 31-JAN-2002.  
 XX PF 23-JUL-2001; 2001WO-US23041.  
 PI PI Jacobson R, Jones RM, Cartier GE; Shon K;  
 XX PR 21-JUL-2000; 2000US-219616P.  
 PR 05-FEB-2001; 2001US-265888P.  
 XX PA (UTAH ) UNIV UTAH RES FOUND.  
 PA (COGN- ) COGNETIX INC.  
 XX PD 31-JAN-2002.  
 PT PT voltage gated ion channels e.g. pain, inflammation, neurological or  
 PT cardiovascular disorders -  
 XX PS Claim 1(c): Page 36; 195pp; English.  
 XX The invention relates to isolated omega-conopeptides, nucleic acid  
 CC sequences encoding them, and propeptide sequences. The activity of  
 CC the peptides of the invention may be described as: analgesic,  
 CC anticonvulsant, vasoconstrictive, cardiotonic, neuroprotective,  
 CC cardiovascular, antiinflammatory, antimigraine, antidiabetic,  
 CC tranquiliser, vulnerary, antipsychotic, anxiolytic and neuroleptic.  
 CC Peptides of the invention act by modulating the activity of voltage gated  
 CC ion channels. They may be used for treating or preventing disorders  
 CC associated with voltage gated ion channels such as neurological  
 CC disorders e.g. seizure (associated with epilepsy), neurotoxic injury  
 CC associated with conditions of hypoxia, anoxia, ischaemia, stroke,  
 CC cerebrovascular accident, brain or spinal chord trauma, drowning,  
 CC suffocation, perinatal asphyxia or hypoglycaemic events; pain e.g.  
 CC migraine; inflammation; cardiovascular disorder; psychiatric disorder.  
 CC They may also be used for treating psychiatric disorders. They may also be used  
 CC for treating schizophrenia. The analgesic agents of the invention show diminished side  
 CC effects and toxicity, and are non-addictive. The sequences given in  
 CC records ABB96595-ABB96697 represent omega-conopeptide propeptide  
 CC sequences.  
 XX Sequence 71 AA;  
 SQ Query Match 82.3%; Score 311; DB 23; Length 71;  
 Best Local Similarity 80.3%; Pred. No. 5.8e-26;  
 Matches 57; Conservative 5; Mismatches 9; Indels 0; Gaps 0;  
 CC  
 QY 1 MKLTCVIVIVAVILTLTACQLITADDSRGTOEHRLRSKTKLMSMTRKGKPCSRAYNC 60  
 1 |||||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:  
 Db 1 MKLTCVIVIVAVILTLTACQLITADDSRGTOEHRLRSKTKLMSMTRKGKPCSRAYNC 60  
 1 CNGSCRGKCG 71  
 1 CSGSCSGRGC 71  
 XX Sequence 73 AA;  
 SQ Query Match 81.0%; Score 306; DB 23; Length 73;  
 Best Local Similarity 80.8%; Pred. No. 2.1e-25;  
 Matches 59; Conservative 5; Mismatches 7; Indels 2; Gaps 1;  
 CC  
 QY 1 MKLTCVIVIVAVILTLTACQLITADDSRGTOEHRLRSKTKLMSMTRKGKPCSRAYNC 60  
 1 MKLTCVIVIVAVILTLTACQLITADDSRGTOEHRLRSKTKLMSMTRKGKPCSRAYNC 60  
 Db 1 CNGSCRGKCG 71  
 1 CSGSCSGRGC 73  
 DE Omega-conopeptide Sm6.1 propeptide.  
 KW Omega-conopeptide; analgesic; anticonvulsant; vasoconstrictive; cardiotonic;  
 KW

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OM protein - protein search, using sw model

Run on: July 1, 2003, 10:49:37 ; Search time 17.75 Seconds

Title: Perfect score: US-09-910-082A-190

Sequence: 1 MKLTCVVIVAVLVLTAQQLI.....PCSRIAYNCCTGSCRSGKCG 71

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 262574 seqs, 29422322 residues

Total number of hits satisfying chosen parameters: 262574

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%, Maximum Match 100%

Listing first 45 summaries

Database : Issued Patents AA:\*

1: /cgn2\_6/ptodata/1/aa/5A\_COMB\_pep:\*

2: /cgn2\_6/ptodata/1/aa/5B\_COMB\_pep:\*

3: /cgn2\_6/ptodata/1/aa/6A\_COMB\_pep:\*

4: /cgn2\_6/ptodata/1/aa/6B\_COMB\_pep:\*

5: /cgn2\_6/ptodata/1/aa/pcrtus/COMB\_pep:\*

6: /cgn2\_6/ptodata/1/aa/backfilesl.pep:\*

Pred. No. 1 is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	330	87.3	71	1	US-07-689-693B-1
2	259.5	68.7	73	1	US-07-689-693B-3
3	259.5	68.7	73	1	US-08-624-123-12
4	259.5	68.7	73	5	PCN-US36-05262-13
5	219.9	57.9	45	1	US-07-689-693B-19
6	198	52.4	45	1	US-07-689-693B-20
7	135.5	35.8	78	1	US-07-689-693B-5
8	135.5	35.8	78	1	US-08-624-123-13
9	135.5	35.8	78	2	US-08-716-308-2
10	135.5	35.8	78	2	US-08-716-308-16
11	135	35.8	78	5	PCP-US36-05262-14
12	135	35.7	77	2	US-08-716-308-17
13	134	35.4	77	1	US-07-689-693B-7
14	128	33.9	26	1	US-08-049-744-11
15	128	33.9	26	1	US-08-496-847-11
16	128	33.9	26	2	US-08-742-774-11
17	128	33.9	26	2	US-08-675-834-11
18	128	33.9	26	2	US-08-965-918-11
19	128	33.9	26	2	US-09-138-439-11
20	128	33.9	26	3	US-08-613-400A-11
21	128	33.9	26	3	US-09-298-017-11
22	128	33.9	26	4	US-09-392-979A-11
23	128	33.9	77	2	US-08-116-308-18
24	127	33.6	26	1	US-07-789-913-11
25	127	33.6	27	1	US-07-789-913-14
26	126	33.3	25	1	US-08-965-847-35
27	126	33.3	35	1	US-08-965-918-35

ALIGNMENTS

RESULT 1

US-07-689-693B-1

Sequence 1, Application US/07689693B

Patent No. 5231011

GENERAL INFORMATION:

APPLICANT: David Hillyard

APPLICANT: Baldomero M. Olivera

TITLE OF INVENTION: Segregated Folding Determinants for Small Disulfide-Rich Peptides

TITLE OF INVENTION: Segregated Folding Determinants for Small Disulfide-Rich Peptides

NUMBER OF SEQUENCES: 25

CORRESPONDENCE ADDRESS:

ADDRESSEE: Thorpe, No. 5231011th & Western

CITY: Sandy

STATE: Utah

ZIP: 84070

COMPUTER READABLE FORM:

MEDIUM TYPE: Diskette, 3.5 inch, 720 Kb storage

COMPUTER: Compaq LTE/286

OPERATING SYSTEM: DOS 4.01

SOFTWARE: Word Perfect 5.1

CURRENT APPLICATION DATA:

APPLICATION NUMBER: US/07/689,693B

APPLICATION NUMBER: 19910418

CLASSIFICATION: 530

PRIORITY APPLICATION DATA:

APPLICATION NUMBER: none

FILING DATE: na

ATTORNEY/AGENT INFORMATION:

NAME: Western, M. Wayne

REGISTRATION NUMBER: 22,788

REFERENCE/DOCKET NUMBER: 9925

TELECOMMUNICATION INFORMATION:

TELEPHONE: (801) 566-6633

TELEFAX: (801) 566-0750

INFORMATION FOR SEQ ID NO: 1:

SEQUENCE CHARACTERISTICS:

LENGTH: 71 amino acids

TYPE: AMINO ACID

TOPOLOGY: linear

MOLECULE TYPE: peptide

FEATURE:

NAME/KEY: Prepropeptide sequence for four-loop NAME/KEY: MW1B Omega conotoxin from Conus magus.

IDENTIFICATION METHOD: Libraries were created

IDENTIFICATION METHOD: using oligo-dT primed pcr13 vector

US-07-689-693B-1

Query Match 87.3%; Score 330; DB 1; Length 71;

Best Local Similarity 87.3%; Pred. No. 6.2e-29; Mismatches 2; Indels 0; Gaps 0; Matches 62; Conservative 2; Mismatches 7; Indels 0; Gaps 0; Sequence 3; Application US/07689693B

QY 1 |||||||MKLTCVVIVAVILLTACOLITADDSRGTKRALSRSRDKTLMSTRCKGKGKPCSRAYNC 60

Db 1 |||||||MKLTCVVIVAVILLTACOLITADDSRGTKRALSRSRDKTLMSTRCKGKGKPCSRAYNC 60

QY 61 CTGSCRSRGKCG 71

Db 61 CTGSCNRGKCG 71

RESULT 2  
US-07-689-693B-3

GENERAL INFORMATION:  
APPLICANT: David Hillyard  
APPLICANT: Baldomero M. Olivera

TITLE OF INVENTION: Segregated Folding Determinants for Small Disulfide-Rich Peptides

NUMBER OF SEQUENCES: 25

CORRESPONDENCE ADDRESS:  
ADDRESSEE: Thorpe, No. 5231011th & Western  
STREET: 9035 South, 700 East, Suite 200  
CITY: Sandy  
STATE: Utah  
COUNTRY: USA  
ZIP: 84070

COMPUTER READABLE FORM:  
MEDIUM TYPE: Diskette, 3.5 inch, 720 kb storage  
COMPUTER: Compaq LTE/286  
OPERATING SYSTEM: DOS 4.01  
SOFTWARE: Word Perfect 5.1

CURRENT APPLICATION DATA:  
APPLICATION NUMBER: US/07/689 693B  
FILING DATE: 19910418  
CLASSIFICATION: 530

PRIOR APPLICATION DATA:  
APPLICATION NUMBER: none

FILING DATE: na

ATTORNEY/AGENT INFORMATION:  
NAME: Western, M. Wayne  
REGISTRATION NUMBER: 22, 788  
REFERENCE/DOCKET NUMBER: 9925

TELECOMMUNICATION INFORMATION:  
TELEPHONE: (801) 566-6633  
TELEFAX: (801) 566-0750

INFORMATION FOR SEQ ID NO: 3:  
SEQUENCE CHARACTERISTICS:  
LENGTH: 73 amino acids  
TYPE: AMINO ACID  
TOPOLOGY: linear

MOLECULE TYPE: peptide

FEATURE:  
NAME/KEY: Prepropeptide sequence for four-loop  
NAME/KEY: GvIA Omega conotoxin from Conus geographus.

IDENTIFICATION METHOD: Libraries were created

IDENTIFICATION METHOD: using oligo-dT primed PUC13 vector

US-07-689-693B-3

Query Match 68.7%; Score 259.5; DB 1; Length 73;  
Best Local Similarity 80.0%; Pred. No. 2.5e-21; Mismatches 52; Conservative 3; Mismatches 9; Indels 1; Gaps 1; Matches 52; Conservative 3; Mismatches 9; Indels 1; Gaps 1;

QY 1 MKLTCVVIVAVILLTACOLITADDSRGTKRALSRSRDKTLMSTRCKGKGKPCSRAYNC 60

Db 1 MKLTCVVIVAVILLTACOLITADDSRGTKRALSRSRDKTLMSTRCKGKGKPCSRAYNC 60

QY 61 CTGSC 65

Db 61 CR-SC 64

RESULT 3  
US-08-624-123-12

GENERAL INFORMATION:  
APPLICANT: Shon, Ki-Joon  
APPLICANT: Grille, Michelle M.  
APPLICANT: Olivera, Baldomero M.  
APPLICANT: Yoshihama, Doju  
APPLICANT: Marsh, Maren  
APPLICANT: Cruz, Lourdes J.

Patent No. 5739276

APPLICANT: Venable, Baetjer, Howard & Civiletti  
ADDRESSEE: 1201 New York Avenue N.W.  
STREET: Washington  
CITY: DC  
STATE: DC  
COUNTRY: US  
ZIP: 20005

COMPUTER READABLE FORM:  
MEDIUM TYPE: Floppy disk  
COMPUTER: IBM PC compatible  
OPERATING SYSTEM: PC-DOS/MS-DOS  
SOFTWARE: Patentin Release #1.0, Version #1.30

CURRENT APPLICATION DATA:  
APPLICATION NUMBER: US/08/624,123  
FILING DATE: 07-OCT-1994  
CLASSIFICATION: 530

PRIOR APPLICATION DATA:  
APPLICATION NUMBER: US 08/319,554  
FILING DATE: 17-APR-1995

ATTORNEY/AGENT INFORMATION:  
NAME: Ihnen, Jeffrey L.  
REGISTRATION NUMBER: 28, 957  
REFERENCE/DOCKET NUMBER: 24260-107674-5

TELECOMMUNICATION INFORMATION:  
TELEPHONE: 202-962-4810  
TELEFAX: 202-962-8300

INFORMATION FOR SEQ ID NO: 12:  
SEQUENCE CHARACTERISTICS:  
LENGTH: 73 amino acids  
TYPE: amino acid  
STRANDEDNESS: single  
TOPOLOGY: linear  
MOLECULE TYPE: protein  
HYPOTHETICAL: NO

US-08-624-123-12

Query Match 68.7%; Score 259.5; DB 1; Length 73;  
Best Local Similarity 80.0%; Pred. No. 2.5e-21; Mismatches 52; Conservative 3; Mismatches 9; Indels 1; Gaps 1; Matches 52; Conservative 3; Mismatches 9; Indels 1; Gaps 1;

QY 1 MKLTCVVIVAVILLTACOLITADDSRGTKRALSRSRDKTLMSTRCKGKGKPCSRAYNC 60

Db 1 MKLTCVVIVAVILLTACOLITADDSRGTKRALSRSRDKTLMSTRCKGKGKPCSRAYNC 60

QY 61 CTGSC 65

Db 61 CR-SC 64

RESULT 4  
PCT-US96-05262-13

GENERAL INFORMATION:  
APPLICANT: Shon, Ki-Joon  
APPLICANT: Grille, Michelle M.  
APPLICANT: Olivera, Baldomero M.  
APPLICANT: Yoshihama, Doju  
APPLICANT: Marsh, Maren  
APPLICANT: Cruz, Lourdes J.

APPLICANT: Hillyard, David R.  
 TITLE OF INVENTION: Conotoxin Peptides  
 NUMBER OF SEQUENCES: 14  
 CORRESPONDENCE ADDRESS:  
 ADDRESSEE: Venable, Baetjer, Howard & Civiletti, LLP  
 STREET: 1201 New York Avenue, N.W., Suite 1000  
 CITY: Washington  
 STATE: DC  
 COUNTRY: U.S.A.  
 ZIP: 20005

COMPUTER READABLE FORM:  
 COMPUTER: IBM PC compatible  
 OPERATING SYSTEM: PC-DOS/MS-DOS  
 SOFTWARE: PatentIn Release #1.0, Version #1.30  
 CURRENT APPLICATION DATA:  
 APPLICATION NUMBER: PCT/US96/05262  
 FILING DATE: 17-APR-1996  
 CLASSIFICATION:  
 PRIORITY APPLICATION DATA:  
 APPLICATION NUMBER: US 08/423, 561  
 FILING DATE: 17-APR-1995  
 ATTORNEY/AGENT INFORMATION:  
 NAME: Saxe, Stephen A.

REGISTRATION NUMBER: 38,609  
 REFERENCE/DOCKET NUMBER: 24260-107674  
 TELECOMMUNICATION INFORMATION:  
 TELEPHONE: 202-962-8300  
 TELEFAX: 202-962-8348

INFORMATION FOR SEQ ID NO: 13:  
 SEQUENCE CHARACTERISTICS:  
 LENGTH: 73 amino acids  
 TYPE: amino acid  
 STRANDEDNESS: single  
 TOPOLOGY: linear  
 MOLECULE TYPE: protein  
 HYPOTHETICAL: NO  
 PCT-US96-05262-13

Query Match 68.7%; Score 259.5; DB 5; Length 73;  
 Best Local Similarity 80.0%; Pred. No. 2.5e-21; Indels 0; Gaps 0;  
 Matches 52; Conservative 3; Mismatches 9; Indels 1; Gaps 1;

QY 1 MKLTCVIVAVVLLTACQLITADDSRGQTQHRLSDTKISMSRCKGKGPCRIAYNC 60  
 Db 1 MKLTCVIVAVVLLTACQLITADDSRGQTQHRLSDTKISMSRCKGKGPCRIAYNC 60  
 QY 61 CTGSC 65  
 Db 61 CR-SC 64

RESULT 5  
 US-07-689-693B-19  
 Sequence 19, Application US/07689693B  
 Patent No. 5231011  
 GENERAL INFORMATION:  
 APPLICANT: David Hillyard  
 APPLICANT: Baldomero M. Olivera  
 TITLE OF INVENTION: Segregated Folding Determinants  
 TITLE OF INVENTION: for Small Disulfide-Rich Peptides  
 NUMBER OF SEQUENCES: 25  
 CORRESPONDENCE ADDRESS:  
 ADDRESSEE: Thorpe, No. 5231011th & Western  
 STREET: 9035 South 700 East, Suite 200  
 CITY: Sandy  
 STATE: Utah  
 COUNTRY: USA  
 ZIP: 84070

COMPUTER READABLE FORM:  
 MEDIUM TYPE: DISKETTE, 3.5 inch, 720 Kb storage  
 COMPUTER: Compaq LTE/286  
 OPERATING SYSTEM: DOS 4.01  
 SOFTWARE: Word Perfect 5.1  
 CURRENT APPLICATION DATA:  
 APPLICATION NUMBER: US/07/689, 693B  
 FILING DATE: 19910418  
 CLASSIFICATION: 530

PRIORITY APPLICATION DATA:  
 APPLICATION NUMBER: none  
 FILING DATE: na

ATTORNEY/AGENT INFORMATION:  
 NAME: Western, M. Wayne  
 REGISTRATION NUMBER: 22,788  
 REFERENCE/DOCKET NUMBER: 9925  
 TELECOMMUNICATION INFORMATION:  
 TELEPHONE: (801) 566-6633  
 TELEFAX: (801) 566-0750

TELEFAX: (801) 566-0750  
 TELEPHONE: (801) 566-6633  
 INFORMATION FOR SEQ ID NO: 19:  
 SEQUENCE CHARACTERISTICS:  
 LENGTH: 45 amino acids  
 TYPE: AMINO ACID  
 TOPOLOGY: linear  
 MOLECULE TYPE: peptide  
 FEATURE:  
 NAME/KEY: Signal/Pro sequence for synthesis of  
 IDENTIFICATION METHOD: Libraries were created  
 IDENTIFICATION METHOD: using oligo-dt primed pUC13 vector  
 US-07-689-693B-19

Query Match 57.9%; Score 219; DB 1; Length 45;  
 Best Local Similarity 100.0%; Pred. No. 3.4e-17;  
 Matches 45; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 MKLTCVIVAVVLLTACQLITADDSRGQTQHRLSDTKISMSRCKGKGPCRIAYNC 45  
 Db 1 MKLTCVIVAVVLLTACQLITADDSRGQTQHRLSDTKISMSRCKGKGPCRIAYNC 45

RESULT 6  
 US-07-689-693B-20  
 Sequence 20, Application US/07689693B  
 Patent No. 5231011  
 GENERAL INFORMATION:  
 APPLICANT: David Hillyard  
 APPLICANT: Baldomero M. Olivera  
 TITLE OF INVENTION: Segregated Folding Determinants  
 TITLE OF INVENTION: for Small Disulfide-Rich Peptides  
 NUMBER OF SEQUENCES: 25  
 CORRESPONDENCE ADDRESS:  
 ADDRESSEE: Thorpe, No. 5231011th & Western  
 STREET: 9035 South 700 East, Suite 200  
 CITY: Sandy  
 STATE: Utah  
 COUNTRY: USA  
 ZIP: 84070

COMPUTER READABLE FORM:  
 MEDIUM TYPE: DISKETTE, 3.5 inch, 720 Kb storage  
 COMPUTER: Compaq LTE/286  
 OPERATING SYSTEM: DOS 4.01  
 SOFTWARE: Word Perfect 5.1  
 CURRENT APPLICATION DATA:  
 APPLICATION NUMBER: US/07/689, 693B  
 FILING DATE: 19910418  
 CLASSIFICATION: 530

PRIORITY APPLICATION DATA:  
 APPLICATION NUMBER: none  
 FILING DATE: na

ATTORNEY/AGENT INFORMATION:  
 NAME: Western, M. Wayne  
 REGISTRATION NUMBER: 22,788  
 REFERENCE/DOCKET NUMBER: 9925  
 TELECOMMUNICATION INFORMATION:  
 TELEPHONE: (801) 566-6633  
 TELEFAX: (801) 566-0750

INFORMATION FOR SEQ ID NO: 20:  
 SEQUENCE CHARACTERISTICS:  
 LENGTH: 45 amino acids  
 TYPE: AMINO ACID  
 TOPOLOGY: linear  
 MOLECULE TYPE: peptide  
 FEATURE: NAME/KEY: Signal/Pro sequence for synthesis of four-loop GVTA Omega conotoxin  
 IDENTIFICATION METHOD: Libraries were created using oligo-dT primed pNC13 vector

US-07-689-693B-20

Query Match 52.4%; Score 198; DB 1; Length 45;  
 Best Local Similarity 91.1%; Pred. No. 6.2e-15; Mismatches 24; Indels 7; Gaps 0;  
 Matches 41; Conservative 2; Mismatches 24; Indels 7; Gaps 0;

QY 1 MKLTCVVIVAVVLITACQLITADDSSRG-----TOKHRLRSDTKLSMSTR-CKGKGKPC 53  
 1 MKLTCVVIVAVVLITACQLITADDSSRG-----TOKHRLRSDTKLSMSTR-CKGKGKPC 53

Db 1 MKLTCVVIVAVVLITACQLITADDSSRG-----TOKHRLRSDTKLSMSTR-CKGKGKPC 53

QY 54 SRIAYNCCTGSC 65  
 1 MKLTCVVIVAVVLITACQLITADDSSRG-----TOKHRLRSDTKLSMSTR-CKGKGKPC 60  
 1 MKLTCVVIVAVVLITACQLITADDSSRG-----TOKHRLRSDTKLSMSTR-CKGKGKPC 60

Db 61 NLIDQNCGCGC 72

RESULT 7  
 US-07-689-693B-5  
 Sequence 5, Application US/07689693B  
 Patent No. 5231011

GENERAL INFORMATION:  
 APPLICANT: David Hillyard  
 ATTORNEY/AGENT INFORMATION:  
 APPLICANT: Baldomero M. Olivera  
 TITLE OF INVENTION: Segregated Folding Determinants  
 NUMBER OF SEQUENCES: 25  
 CORRESPONDENCE ADDRESS:  
 ADDRESSEE: Thorpe, No. 5231011th & Western  
 STREET: 9035 South 700 East, Suite 200  
 CITY: Sandy  
 STATE: Utah  
 ZIP: 84070

COMPUTER READABLE FORM:  
 MEDIUM TYPE: Diskette, 3.5 inch, 720 Kb storage  
 OPERATING SYSTEM: DOS 4.0.1  
 SOFTWARE: Word Perfect 5.1

CURRENT APPLICATION DATA:  
 APPLICATION NUMBER: US/07/689, 693B  
 FILING DATE: 19910418  
 CLASSIFICATION: 530  
 PRIOR APPLICATION DATA:  
 APPLICATION NUMBER: US 08/319, 554  
 FILING DATE: 07-OCT-1994  
 PRIOR APPLICATION DATA:  
 APPLICATION NUMBER: US 08/423, 561  
 FILING DATE: 17-APR-1995  
 ATTORNEY/AGENT INFORMATION:  
 NAME: Ihnen, Jeffrey L.  
 REGISTRATION NUMBER: 28, 957  
 REFERENCE DOCKET NUMBER: 24260-107674-5  
 TELECOMMUNICATION INFORMATION:  
 TELEPHONE: 202-962-4810  
 TELEFAX: 202-962-8300

INFORMATION FOR SEQ ID NO: 13:  
 SEQUENCE CHARACTERISTICS:  
 LENGTH: 78 amino acids  
 TYPE: amino acid  
 STRANDEDNESS: single  
 TOPOLOGY: linear  
 MOLECULE TYPE: protein  
 HYPOTHETICAL: NO

US-08-624-123-13

Query Match 35.8%; Score 135.5; DB 1; Length 78;  
 Best Local Similarity 40.3%; Pred. No. 5.8e-08; Mismatches 24; Indels 7; Gaps 2;  
 Matches 29; Conservative 12; Mismatches 24; Indels 7; Gaps 2;

QY 1 MKLTCVVIVAVVLITACQLITADDSSRG-----TOKHRLRSDTKLSMSTR-CKGKGKPC 53  
 1 MKLTCVVIVAVVLITACQLITADDSSRG-----TOKHRLRSDTKLSMSTR-CKGKGKPC 53

Db 1 MKLTCVVIVAVVLITACQLITADDSSRG-----TOKHRLRSDTKLSMSTR-CKGKGKPC 60  
 1 MKLTCVVIVAVVLITACQLITADDSSRG-----TOKHRLRSDTKLSMSTR-CKGKGKPC 60

QY 54 SRIAYNCCTGSC 65  
 1 MKLTCVVIVAVVLITACQLITADDSSRG-----TOKHRLRSDTKLSMSTR-CKGKGKPC 60

Db 61 NLIDQNCGCGC 72

RESULT 8  
 US-08-624-123-13  
 Sequence 13, Application US/08624123  
 Patent No. 5739276

GENERAL INFORMATION:  
 APPLICANT: Shon, Ki-Joon  
 APPLICANT: Grille, Michelle M.  
 APPLICANT: Olivera, Baldomero M.  
 TITLE OF INVENTION: Conotoxin Peptides  
 NUMBER OF SEQUENCES: 13

CORRESPONDENCE ADDRESS:  
 ADDRESSEE: Baetjer, Howard & Civiletti  
 STREET: 1201 New York Avenue N.W.  
 CITY: Washington  
 STATE: DC  
 COUNTRY: US  
 ZIP: 20005

COMPUTER READABLE FORM:  
 MEDIUM TYPE: floppy disk  
 COMPUTER: IBM PC compatible  
 OPERATING SYSTEM: PC-DOC/Ma-DOS  
 SOFTWARE: Patent In Release #1.0, Version #1.30

CURRENT APPLICATION DATA:  
 APPLICATION NUMBER: US/08/624, 123  
 FILING DATE: 2005  
 CLASSIFICATION: 530  
 PRIOR APPLICATION DATA:  
 APPLICATION NUMBER: US 08/319, 554  
 FILING DATE: 07-OCT-1994  
 PRIOR APPLICATION DATA:  
 APPLICATION NUMBER: US 08/423, 561  
 FILING DATE: 17-APR-1995  
 ATTORNEY/AGENT INFORMATION:  
 NAME: Ihnen, Jeffrey L.  
 REGISTRATION NUMBER: 28, 957  
 REFERENCE DOCKET NUMBER: 24260-107674-5  
 TELECOMMUNICATION INFORMATION:  
 TELEPHONE: 202-962-4810  
 TELEFAX: 202-962-8300

INFORMATION FOR SEQ ID NO: 13:  
 SEQUENCE CHARACTERISTICS:  
 LENGTH: 78 amino acids  
 TYPE: amino acid  
 STRANDEDNESS: single  
 TOPOLOGY: linear  
 MOLECULE TYPE: protein  
 HYPOTHETICAL: NO

US-08-624-123-13

Query Match 35.8%; Score 135.5; DB 1; Length 78;  
 Best Local Similarity 40.3%; Pred. No. 5.8e-08; Mismatches 24; Indels 7; Gaps 2;  
 Matches 29; Conservative 12; Mismatches 24; Indels 7; Gaps 2;

QY 1 MKLTCVVIVAVVLITACQLITADDSSRG-----TOKHRLRSDTKLSMSTR-CKGKGKPC 53  
 1 MKLTCVVIVAVVLITACQLITADDSSRG-----TOKHRLRSDTKLSMSTR-CKGKGKPC 53

Db 1 MKLTCVVIVAVVLITACQLITADDSSRG-----TOKHRLRSDTKLSMSTR-CKGKGKPC 60  
 1 MKLTCVVIVAVVLITACQLITADDSSRG-----TOKHRLRSDTKLSMSTR-CKGKGKPC 60

QY 54 SRIAYNCCTGSC 65  
 1 MKLTCVVIVAVVLITACQLITADDSSRG-----TOKHRLRSDTKLSMSTR-CKGKGKPC 60

Db 61 NLIDQNCGCGC 72

Db 61 NLLDQNCDCGTC 72

COUNTRY: USA  
ZIP: 19850

COMPUTER READABLE FORM:

MEDIUM TYPE: Floppy disk

COMPUTER: IBM PC compatible

OPERATING SYSTEM: PC-DOS/MS-DOS

SOFTWARE: Patentin Release #1.0, Version #1.25

CURRENT APPLICATION DATA:

APPLICATION NUMBER: US/08/716,308

FILING DATE: 24-SEP-1996

CLASSIFICATION: 424

PRIOR APPLICATION DATA:

APPLICATION NUMBER: PCT/GB95/00677

FILING DATE: 27-MAR-1995

PRIORITY APPLICATION DATA:

APPLICATION NUMBER: GB 9405951.6

FILING DATE: 25-MAR-1994

ATTORNEY/AGENT INFORMATION:

NAME: Hohenschutz, Liza D.

REGISTRATION NUMBER: 33,712

REFERENCE/DOCKET NUMBER: PPD40027X/UST

TELECOMMUNICATION INFORMATION:

TELEPHONE: (302) 886-1699

INFORMATION FOR SEQ ID NO: 16:

SEQUENCE CHARACTERISTICS:

LENGTH: 78 amino acids

TOPOLOGY: Linear

MOLECULE TYPE: Peptide

US-08-716-308-2

RESULT 9  
US-08-716-308-2  
; Sequence 2, Application US/08716308  
; Patent No. 5885569  
; GENERAL INFORMATION:  
; APPLICANT: Windass, John D.  
; TITLE OF INVENTION: Biological Insect Control Agent  
; NUMBER OF SEQUENCES: 18  
; CORRESPONDENCE ADDRESS:  
; ADDRESSEE: ZENECA Inc.  
; STREET: 1800 Concord Pike  
; CITY: Wilmington  
; STATE: DE  
; ZIP: 19850  
; COMPUTER READABLE FORM:  
; MEDIUM TYPE: Floppy disk  
; COMPUTER: IBM PC compatible  
; OPERATING SYSTEM: PC-DOS/MS-DOS  
; SOFTWARE: Patentin Release #1.0, Version #1.30  
; CURRENT APPLICATION DATA:  
; APPLICATION NUMBER: PCT/US96/05262  
; FILING DATE: 17-APR-1996  
; CLASSIFICATION:

CURRENT APPLICATION DATA:  
APPLICATION NUMBER: US/08/716,308  
FILING DATE: 24-SEP-1996  
CLASSIFICATION: 424  
PRIORITY APPLICATION DATA:  
APPLICATION NUMBER: PCT/GB95/00677  
FILING DATE: 27-MAR-1995  
PRIORITY APPLICATION DATA:  
APPLICATION NUMBER: GB 9405951.6  
FILING DATE: 25-MAR-1994  
ATTORNEY/AGENT INFORMATION:  
NAME: Hohenschutz, Liza D.  
REGISTRATION NUMBER: 33,712  
REFERENCE/DOCKET NUMBER: PPD40027X/UST  
TELEPHONE: (302) 886-1699  
INFORMATION FOR SEQ ID NO: 16:  
SEQUENCE CHARACTERISTICS:  
LENGTH: 78 amino acids  
TOPOLOGY: Linear  
MOLECULE TYPE: Peptide

US-08-716-308-16  
PCT-US96-05262-14  
; Sequence 14, Application PCT/US9605262  
; GENERAL INFORMATION:  
; APPLICANT: Shon, Ki-Joon  
; APPLICANT: Grille, Michelle M.  
; APPLICANT: Oliviera, Baldomero M.  
; APPLICANT: Yoshikami, Doju  
; APPLICANT: Marsh, Maren  
; APPLICANT: Cruz, Lourdes J.  
; APPLICANT: Hilliard, David R.  
; TITLE OF INVENTION: Conotoxin Peptides  
; NUMBER OF SEQUENCES: 14  
; CORRESPONDENCE ADDRESS:  
; ADDRESSEE: Verable, Baetjer, Howard & Civiletti, LLP  
; STREET: 1201 New York Avenue, N.W., Suite 1000  
; CITY: Washington  
; STATE: DC  
; COUNTRY: U.S.A.  
; ZIP: 20005  
; COMPUTER READABLE FORM:  
; MEDIUM TYPE: Floppy disk  
; COMPUTER: IBM PC compatible  
; OPERATING SYSTEM: PC-DOS/MS-DOS  
; SOFTWARE: Patentin Release #1.0, Version #1.30  
; CURRENT APPLICATION DATA:  
; APPLICATION NUMBER: PCT/US96/05262  
; FILING DATE: 17-APR-1996  
; CLASSIFICATION:

RESULT 10  
US-08-716-308-16  
; Sequence 16, Application US/08716308  
; Patent No. 5885569  
; GENERAL INFORMATION:  
; APPLICANT: Windass, John D.  
; TITLE OF INVENTION: Biological Insect Control Agent  
; NUMBER OF SEQUENCES: 18  
; CORRESPONDENCE ADDRESS:  
; ADDRESSEE: ZENECA Inc.  
; STREET: 1800 Concord Pike  
; CITY: Wilmington  
; STATE: DE  
; ZIP: 19850  
; COMPUTER READABLE FORM:  
; MEDIUM TYPE: Floppy disk  
; COMPUTER: IBM PC compatible  
; OPERATING SYSTEM: PC-DOS/MS-DOS  
; SOFTWARE: Patentin Release #1.0, Version #1.30  
; CURRENT APPLICATION DATA:  
; APPLICATION NUMBER: PCT/US96/05262  
; FILING DATE: 17-APR-1996  
; CLASSIFICATION:

PRIOR APPLICATION DATA:  
APPLICATION NUMBER: US 08/423,561  
FILING DATE: 17-APR-1995  
ATTORNEY/AGENT INFORMATION:  
NAME: Saxe, Stephen A.  
REGISTRATION NUMBER: 38,609  
REFERENCE/DOCKET NUMBER: 24260-107674  
TELECOMMUNICATION INFORMATION:  
TELEPHONE: 202-962-8488  
TELEFAX: 202-962-8300  
INFORMATION FOR SEQ ID NO: 14:  
SEQUENCE CHARACTERISTICS:  
LENGTH: 78 amino acids  
TYPE: amino acid  
STRANDEDNESS: single  
TOPOLOGY: linear  
MOLECULE TYPE: protein  
HYPOTHETICAL: NO  
1596-05262-14

Query Match 35.8%; Score 135.5; DB 5; Length 78;  
 Best Local Similarity 40.3%; Pred. No. 8; 50e-08; 24; Mismatches 2;  
 Matches 29; Conservative 12; Mismatches 2;

APPLICANT: Baldwinero, M. Olivera  
 APPLICANT: David Hillyard  
 APPLICANT: Segregated Folding Determ  
 TITLE OF INVENTION: for Small Disulfide-Rich  
 NUMBER OF SEQUENCES: 25  
 CORRESPONDENCE ADDRESS:  
 ADDRESSEE: Thorie, No. 5231011th & Western  
 STREET: 9035 South 700 East, Suite 200  
 CITY: Sandy  
 STATE: Utah  
 COUNTRY: USA  
 ZIP: 84070

GENERAL INFORMATION:  
 Patent No. 5885569

APPLICANT: Wildass, John D.  
 TITLE OF INVENTION: Biological Insect Control Agent  
 NUMBER OF SEQUENCES: 18

CORRESPONDENCE ADDRESS:  
 ADDRESSEE: ZENECA, INC.  
 STREET: 1800 Concord Pike  
 CITY: Wilmington  
 STATE: DE  
 COUNTRY: USA  
 ZIP: 19850

COMPUTER READABLE FORM:  
 COMPUTER: IBM PC compatible  
 OPERATING SYSTEM: DOS 4.01  
 SOFTWARE: Word Perfect 5.1

CURRENT APPLICATION DATA:  
 APPLICATION NUMBER: US/07/689,693B  
 FILING DATE: 19910418  
 CLASSIFICATION: 530

PRIOR APPLICATION DATA:  
 APPLICATION NUMBER: none  
 FILING DATE: na

ATTORNEY/AGENT INFORMATION:  
 NAME: Western, M. Wayne  
 REGISTRATION NUMBER: 22,788  
 REFERENCE/DOCKET NUMBER: 9935

TELECOMMUNICATION INFORMATION:  
 TELEPHONE: (801) 566-6533  
 TELEFAX: (801) 566-0750

INFORMATION FOR SEQ ID NO: 7:

SEQUENCE CHARACTERISTICS:  
 LENGTH: 77 amino acids  
 TYPE: AMINO ACID  
 TOPOLOGY: linear  
 MOLECULE TYPE: peptide

FEATURE:  
 NAME/KEY: Prepropeptide sequence for four 1

APPLICATION NUMBER: GB 9405951. 6  
 FILING DATE: 25-MAR-1994

ATTORNEY/AGENT INFORMATION:  
 NAME: Hohenschutz, Liza D.  
 REGISTRATION NUMBER: 33,712  
 REFERENCE/DOCKET NUMBER: PPP40027X/UST

TELECOMMUNICATION INFORMATION:  
 TELEPHONE: (302) 886-1999  
 INFORMATION FOR SEQ ID NO: 17:  
 SEQUENCE CHARACTERISTICS:  
 LENGTH: 77 amino acids  
 TYPE: amino acid

RESULT 12  
 DS-08-716-308-17  
 Sequence 17, Application US/08716308  
 GENERAL INFORMATION:  
 Patent No. 5885569

APPLICANT: Wildass, John D.  
 TITLE OF INVENTION: Biological Insect Control Agent  
 NUMBER OF SEQUENCES: 18

CORRESPONDENCE ADDRESS:  
 ADDRESSEE: ZENECA, INC.  
 STREET: 1800 Concord Pike  
 CITY: Wilmington  
 STATE: DE  
 COUNTRY: USA  
 ZIP: 19850

COMPUTER READABLE FORM:  
 COMPUTER: Compaq LTE/286  
 OPERATING SYSTEM: DOS 5.01  
 SOFTWARE: Word Perfect 5.1

CURRENT APPLICATION DATA:  
 APPLICATION NUMBER: US/07/689,693B  
 FILING DATE: 19910418  
 CLASSIFICATION: 530

PRIOR APPLICATION DATA:  
 APPLICATION NUMBER: none  
 FILING DATE: na

ATTORNEY/AGENT INFORMATION:  
 NAME: Western, M. Wayne  
 REGISTRATION NUMBER: 22,788  
 REFERENCE/DOCKET NUMBER: 9935

TELECOMMUNICATION INFORMATION:  
 TELEPHONE: (801) 566-6533  
 TELEFAX: (801) 566-0750

INFORMATION FOR SEQ ID NO: 7:

SEQUENCE CHARACTERISTICS:  
 LENGTH: 77 amino acids  
 TYPE: AMINO ACID  
 TOPOLOGY: linear  
 MOLECULE TYPE: peptide

FEATURE:  
 NAME/KEY: Prepropeptide sequence for four 1

APPLICATION NUMBER: GB 9405951. 6  
 FILING DATE: 25-MAR-1994

ATTORNEY/AGENT INFORMATION:  
 NAME: Hohenschutz, Liza D.  
 REGISTRATION NUMBER: 33,712  
 REFERENCE/DOCKET NUMBER: PPP40027X/UST

TELECOMMUNICATION INFORMATION:  
 TELEPHONE: (302) 886-1999  
 INFORMATION FOR SEQ ID NO: 17:  
 SEQUENCE CHARACTERISTICS:  
 LENGTH: 77 amino acids  
 TYPE: amino acid

RESULT 12  
 DS-08-716-308-17  
 Sequence 17, Application US/08716308  
 GENERAL INFORMATION:  
 Patent No. 5885569

APPLICANT: Wildass, John D.  
 TITLE OF INVENTION: for Small Disulfide-Rich  
 NUMBER OF SEQUENCES: 25

CORRESPONDENCE ADDRESS:  
 ADDRESSEE: Thorie, No. 5231011th & Western  
 STREET: 9035 South 700 East, Suite 200  
 CITY: Sandy  
 STATE: Utah  
 COUNTRY: USA  
 ZIP: 84070

GENERAL INFORMATION:  
 Patent No. 5231011

PATENT NO. 5231011  
 APPLICANT: David Hillyard  
 APPLICANT: Baldwinero, M. Olivera  
 APPLICANT: Segregated Folding Determ  
 TITLE OF INVENTION: for Small Disulfide-Rich  
 NUMBER OF SEQUENCES: 25

CORRESPONDENCE ADDRESS:  
 ADDRESSEE: Thorie, No. 5231011th & Western  
 STREET: 9035 South 700 East, Suite 200  
 CITY: Sandy  
 STATE: Utah  
 COUNTRY: USA  
 ZIP: 84070

GENERAL INFORMATION:  
 Patent No. 5885569

APPLICANT: Wildass, John D.  
 TITLE OF INVENTION: Biological Insect Control Agent  
 NUMBER OF SEQUENCES: 18

CORRESPONDENCE ADDRESS:  
 ADDRESSEE: ZENECA, INC.  
 STREET: 1800 Concord Pike  
 CITY: Wilmington  
 STATE: DE  
 COUNTRY: USA  
 ZIP: 19850

COMPUTER READABLE FORM:  
 COMPUTER: Compaq LTE/286  
 OPERATING SYSTEM: DOS 5.01  
 SOFTWARE: Word Perfect 5.1

CURRENT APPLICATION DATA:  
 APPLICATION NUMBER: US/07/689,693B  
 FILING DATE: 19910418  
 CLASSIFICATION: 530

PRIOR APPLICATION DATA:  
 APPLICATION NUMBER: none  
 FILING DATE: na

ATTORNEY/AGENT INFORMATION:  
 NAME: Western, M. Wayne  
 REGISTRATION NUMBER: 22,788  
 REFERENCE/DOCKET NUMBER: 9935

TELECOMMUNICATION INFORMATION:  
 TELEPHONE: (801) 566-6533  
 TELEFAX: (801) 566-0750

INFORMATION FOR SEQ ID NO: 7:

SEQUENCE CHARACTERISTICS:  
 LENGTH: 77 amino acids  
 TYPE: AMINO ACID  
 TOPOLOGY: linear  
 MOLECULE TYPE: peptide

FEATURE:  
 NAME/KEY: Prepropeptide sequence for four 1

APPLICATION NUMBER: GB 9405951. 6  
 FILING DATE: 25-MAR-1994

ATTORNEY/AGENT INFORMATION:  
 NAME: Hohenschutz, Liza D.  
 REGISTRATION NUMBER: 33,712  
 REFERENCE/DOCKET NUMBER: PPP40027X/UST

TELECOMMUNICATION INFORMATION:  
 TELEPHONE: (302) 886-1999  
 INFORMATION FOR SEQ ID NO: 17:  
 SEQUENCE CHARACTERISTICS:  
 LENGTH: 77 amino acids  
 TYPE: amino acid

REF ID: DE102001011  
TITLE OF INVENTION: Segregated Folding Determinants  
NUMBER OF SEQUENCES: 25  
CORRESPONDENCE ADDRESS:  
ADDRESSEE: Thorpe, No. 5231011th & Western  
STREET: 9035 South 700 East, Suite 200  
CITY: Sandy  
STATE: Utah  
COUNTRY: USA  
ZIP: 84070  
COMPUTER READABLE FORM:  
MEDIUM TYPE: Diskette, 3.5 inch, 720 Kb storage  
COMPUTER: Compaq LTE/886  
OPERATING SYSTEM: DOS 4.01  
SOFTWARE: Word Perfect 5.1  
CURRENT APPLICATION DATA:  
APPLICATION NUMBER: US/07/689,693B  
FILING DATE: 19910418  
CLASSIFICATION: 530  
PRIORITY DATA:  
APPLICATION NUMBER: none  
FILING DATE: na  
ATTORNEY/AGENT INFORMATION:  
NAME: Western, M. Wayne  
REGISTRATION NUMBER: 22,788  
REFERENCE/DOCKET NUMBER: 9925  
TELECOMMUNICATION INFORMATION:  
TELEPHONE: (801) 566-6633  
TELEFAX: (801) 566-0750  
INFORMATION FOR SEQ ID NO: 7:  
SEQUENCE CHARACTERISTICS:  
LENGTH: 77 amino acids  
TYPE: AMINO ACID  
TOPOLOGY: linear  
MOLECULE TYPE: Peptide  
FEATURE:  
NAME/KEY: Prepropeptide sequence for four loop  
NAME/KEY: Prepropeptide sequence for four loop  
IDENTIFICATION METHOD: Library was constructed using poly A selected mRNA transcripts purified from Conus textile venom duct tissue and cloned into the Okyama-Berg oligo-dT primed plasmid  
IDENTIFICATION METHOD: psV7186.

RESULT 14-US-049-794-11  
; Sequence 11, Application US/08049794  
; Patent No. 5587454  
GENERAL INFORMATION:  
; APPLICANT: JUSTICE, ALAN  
; APPLICANT: SINGH, TEJINDER  
; APPLICANT: GOHIL, KISHOR C  
; APPLICANT: VALENTINO, KAREN L  
; APPLICANT: MILJANICH, GEORGE P  
TITLE OF INVENTION: METHODS OF PRODUCING ANALGESIA AND  
TITLE OF INVENTION: ENHANCING OPIATE ANALGESIA  
NUMBER OF SEQUENCES: 34  
CORRESPONDENCE ADDRESS:  
; ADDRESSEE: Law offices of Peter Dehlinger  
STREET: 350 Cambridge Avenue, Suite 300  
CITY: Palo Alto  
STATE: CA  
COUNTRY: USA  
ZIP: 94306  
COMPUTER READABLE FORM:  
; MEDIUM TYPE: FLOPPY disk  
; COMPUTER: IBM PC compatible  
OPERATING SYSTEM: PC-DOS/MS-DOS  
SOFTWARE: PatentIn Release #1.0, Version #1.25  
CURRENT APPLICATION DATA:  
; APPLICATION NUMBER: US/08049-794  
; FILING DATE: 19930415  
; CLASSIFICATION: 514  
; PRIORITY APPLICATION DATA:  
; APPLICATION NUMBER: US 07/814,759  
; FILING DATE: 30-DEC-1991  
; ATTORNEY/AGENT INFORMATION:  
; NAME: Stratford, Carol A.  
; REGISTRATION NUMBER: 34,444  
; REFERENCE/DOCKET NUMBER: 5865-0009.31  
; TELECOMMUNICATION INFORMATION:  
; TELEPHONE: 650-24-0880  
; TELEFAX: 650-324-0960  
; INFORMATION FOR SEQ ID NO: 11:  
SEQUENCE CHARACTERISTICS:  
; LENGTH: 26 amino acids  
; TYPE: amino acid  
; TOPOLOGY: linear  
; MOLECULE TYPE: Protein  
; HYPOTHETICAL: NO  
; ORIGINAL SOURCE:  
; INDIVIDUAL ISOLATE: SNX-193, FIGURE 2  
; US-08-496-847-11  
Query Match 33.9%; Score 128; DB 1; Length 26;  
Best Local Similarity 76.9%; Pred. No. 1.2e-07;  
Matches 20; Conservative 2; Mismatches 4; Indels 0; Gaps 0;  
; INFORMATION FOR SEQ ID NO: 11:  
SEQUENCE CHARACTERISTICS:  
; LENGTH: 26 amino acids  
; TYPE: AMINO ACID  
; TOPOLOGY: linear  
; MOLECULE TYPE: Protein  
; HYPOTHETICAL: NO  
; ORIGINAL SOURCE:  
; INDIVIDUAL ISOLATE: SNX-193, FIGURE 2  
; US-08-049-794-11

RESULT 15-US-08-498-847-11  
; Sequence 11, Application US/08496847  
; Patent No. 5795864  
; GENERAL INFORMATION:  
; APPLICANT: Amstutz, Gary A.  
; APPLICANT: Bowersox, Stephen S.  
; APPLICANT: Gehl, Kishorchandra  
; APPLICANT: Aglaensens, Peter I.  
; APPLICANT: Kristipati, Ramasharma  
TITLE OF INVENTION: METHODS AND  
TITLE OF INVENTION: FORMULATIONS FOR PREVENTING PROGRESSION OF NEUROPATHIC PAIN  
CORRESPONDENCE ADDRESS:  
; ADDRESSEE: Dehlinger & Associates  
STREET: 350 Cambridge Avenue, Suite 250  
CITY: Palo Alto  
STATE: CA  
COUNTRY: US  
ZIP: 94306-1546  
COMPUTER READABLE FORM:  
; MEDIUM TYPE: Disquette  
COMPUTER: IBM Compatible  
OPERATING SYSTEM: DOS  
SOFTWARE: FastSEO for Windows Version 2.0  
CURRENT APPLICATION DATA:  
; APPLICATION NUMBER: US/08/496,847  
; FILING DATE: 27-JUN-1995  
; CLASSIFICATION: 514  
; ATTORNEY/AGENT INFORMATION:  
; NAME: Stratford, Carol A.  
; REGISTRATION NUMBER: 34,444  
; REFERENCE/DOCKET NUMBER: 5865-0009.31  
; TELECOMMUNICATION INFORMATION:  
; TELEPHONE: 650-24-0880  
; TELEFAX: 650-324-0960  
; INFORMATION FOR SEQ ID NO: 11:  
SEQUENCE CHARACTERISTICS:  
; LENGTH: 26 amino acids  
; TYPE: amino acid  
; TOPOLOGY: linear  
; MOLECULE TYPE: Protein  
; HYPOTHETICAL: NO  
; ORIGINAL SOURCE:  
; INDIVIDUAL ISOLATE: SNX-193, FIGURE 2  
; US-08-496-847-11  
Query Match 33.9%; Score 128; DB 1; Length 26;  
Best Local Similarity 76.9%; Pred. No. 1.2e-07;  
Matches 20; Conservative 2; Mismatches 4; Indels 0; Gaps 0;  
; INFORMATION FOR SEQ ID NO: 11:  
SEQUENCE CHARACTERISTICS:  
; LENGTH: 26 amino acids  
; TYPE: AMINO ACID  
; TOPOLOGY: linear  
; MOLECULE TYPE: Protein  
; HYPOTHETICAL: NO  
; ORIGINAL SOURCE:  
; INDIVIDUAL ISOLATE: SNX-193, FIGURE 2  
; US-08-049-794-11

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Run on: July 1, 2003, 10:52:57 ; Search time 25.1458 Seconds	(without alignments) 309.591 Million cell updates/sec
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Gapop 10.0 , Gapext: 0.5	
Post-processing: Minimum Match 0%	Maximum Match 100%
Database : Published Applications_AA:*	Listing first 45 summaries
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4: /cgn2_6/ptodata/1/pubpaa/US06_PUBCOMB.pep:*	
5: /cgn2_6/ptodata/1/pubpaa/US07_NEWPUB.pep:*	
6: /cgn2_6/ptodata/1/pubpaa/US07_PUBCOMB.pep:*	
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12: /cgn2_6/ptodata/1/pubpaa/US10_PUBCOMB.pep:*	
13: /cgn2_6/ptodata/1/pubpaa/US10_NEWPUB.pep:*	
14: /cgn2_6/ptodata/1/pubpaa/US10_PUBCOMB.pep:*	
Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.	
SUMMARIES	
Result No.	Score
1	211.5
2	200
3	171
4	168.5
5	162
6	152.5
7	151.5
8	150.5
9	149.5
10	147
11	143
12	143
13	142
14	142
15	141
16	139
17	139
18	138.5
19	138.5
20	136
21	135.5
22	135.5
23	135.5
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39	124
40	124
41	123.5
42	123
43	123
44	121
45	121
46	121
47	120.5
48	120
49	120
50	120
ALIGNMENTS	
RESULT 1	US-09-749-637A-408
	; Sequence 408, Application US/09749637A
	; Patent No. US2003017449A1
	; GENERAL INFORMATION:
	; APPLICANT: University of Utah Research Foundation
	; Cognitix, Inc.
	; ATTORNEY/AGENT: Baldermo M.
	; APPLICANT: Cartier, G. Edward
	; APPLICANT: Watkins, Karen
	; APPLICANT: Hilliard, David R.
	; APPLICANT: McIntosh, J. Michael
	; APPLICANT: Layer, Richard T.
	; TITLE OF INVENTION: O-Superfamily Conotoxin Peptides
	; FILE REFERENCE: 2314-227
	; CURRENT APPLICATION NUMBER: US09/749,637A
	; CURRENT FILING DATE: 2000-12-28
	; PRIOR APPLICATION NUMBER: US 60/243,412
	; PRIOR FILING DATE: 2000-10-27
	; PRIOR APPLICATION NUMBER: US60/219,440
	; PRIOR FILING DATE: 2000-07-20
	; PRIOR APPLICATION NUMBER: US 60/214,263
	; PRIOR FILING DATE: 2000-06-26
	; PRIOR APPLICATION NUMBER: US 60/173,754
	; PRIOR FILING DATE: 1999-12-30
	; NUMBER OF SEQ ID NOS: 409
	; SOFTWARE: Patentin version 3.0
	; SEQ ID NO 408
	; LENGTH: 77
	; TYPE: PRT
	; ORGANISM: Conus striolatus
	US-09-749-637A-408
	Query Match 56.0%; Score 211.5; DB 9; Length 77;
	Best Local Similarity 67.7%; Pred. No. 1.6e-14;
	Matches 44; Conservative 3; Mismatches 17; Indels 1; Gaps 1;
Qy	1 MKLTCWIVIVAVLLTACQLITADDSRGTOHRLRSRDTKLSMSTRCKGKGPKPCSRIVNC
Db	1 MKLTCWIVIVAVLLTACQLITADDSRGTOHRLRSRDTKLSMSTRCKGKGPKPCSRIVNC

RESULT 2  
US-10-072-602B-29  
; Sequence 29, Application US/10072602B  
; Publication No. US20030109670A1  
; GENERAL INFORMATION:  
; APPLICANT: University of Utah Research Foundation  
; APPLICANT: Cognetix, Inc.  
; APPLICANT: Olivera, Baldomero M.  
; APPLICANT: McIntosh, J., Michael  
; APPLICANT: Watkins, Maren E.  
; APPLICANT: Cruz, Lourdes J.  
; APPLICANT: Grille, Michelle  
; APPLICANT: Schoenfeld, Robert M.  
; APPLICANT: Walker, Craig  
; APPLICANT: Shetty, Reshma  
; TITLE OF INVENTION: Cone Snail Peptides  
; CURRENT APPLICATION NUMBER: US/10/072,602B  
; CURRENT FILING DATE: 2002-02-11  
; PRIOR APPLICATION NUMBER: US 60/267,408  
; PRIOR FILING DATE: 2001-02-09  
; NUMBER OF SEQ ID NOS: 638  
; SOFTWARE: PatentIn version 3.0  
; SEQ ID NO 29  
; LENGTH: 74  
; TYPE: PRT  
; ORGANISM: *Conus arenatus*  
US-10-072-602B-29

RESULT 3  
US-10-072-602B-168  
; Sequence 168, Application US/10072602B  
; Publication No. US20030109670A1  
; GENERAL INFORMATION:  
; APPLICANT: University of Utah Research Foundation  
; APPLICANT: Cognetix, Inc.  
; APPLICANT: Olivera, Baldomero M.  
; APPLICANT: McIntosh, J., Michael  
; APPLICANT: Watkins, Maren E.  
; APPLICANT: Cruz, Lourdes J.  
; APPLICANT: Grille, Michelle  
; APPLICANT: Schoenfeld, Robert M.  
; APPLICANT: Walker, Craig  
; APPLICANT: Shetty, Reshma  
; TITLE OF INVENTION: Cone Snail Peptides  
; CURRENT APPLICATION NUMBER: US/10/072,602B  
; CURRENT FILING DATE: 2002-02-11  
; PRIOR APPLICATION NUMBER: US 60/267,408  
; PRIOR FILING DATE: 2001-02-09  
; NUMBER OF SEQ ID NOS: 638  
; SOFTWARE: PatentIn version 3.0  
; SEQ ID NO 153  
; LENGTH: 76  
; TYPE: PRT  
; ORGANISM: *Conus miliaris*  
US-10-072-602B-153

RESULT 4  
US-10-072-602B-153  
; Sequence 153, Application US/10072602B  
; Publication No. US20030109670A1  
; GENERAL INFORMATION:  
; APPLICANT: University of Utah Research Foundation  
; APPLICANT: Cognetix, Inc.  
; APPLICANT: Olivera, Baldomero M.  
; APPLICANT: McIntosh, J., Michael  
; APPLICANT: Watkins, Maren E.  
; APPLICANT: Garrett, James E.  
; APPLICANT: Cruz, Lourdes J.  
; APPLICANT: Grille, Michelle  
; APPLICANT: Schoenfeld, Robert M.  
; APPLICANT: Walker, Craig  
; APPLICANT: Shetty, Reshma  
; TITLE OF INVENTION: Cone Snail Peptides  
; CURRENT APPLICATION NUMBER: US/10/072,602B  
; CURRENT FILING DATE: 2002-02-11  
; PRIOR APPLICATION NUMBER: US 60/267,408  
; PRIOR FILING DATE: 2001-02-09  
; NUMBER OF SEQ ID NOS: 638  
; SOFTWARE: PatentIn version 3.0  
; SEQ ID NO 153  
; LENGTH: 76  
; TYPE: PRT  
; ORGANISM: *Conus miliaris*  
US-10-072-602B-153

RESULT 5  
US-10-072-602B-113  
; Sequence 113, Application US/10072602B  
; Publication No. US20030109670A1  
; GENERAL INFORMATION:  
; APPLICANT: University of Utah Research Foundation  
; APPLICANT: Cognetix, Inc.  
; APPLICANT: Olivera, Baldomero M.  
; APPLICANT: McIntosh, J., Michael

APPLICANT: Watkins, Maren  
 APPLICANT: Garrett, James E.  
 APPLICANT: Cruz, Lourdes J.  
 APPLICANT: Grille, Michelle  
 APPLICANT: Schoenfeld, Robert M.  
 APPLICANT: Walker, Craig  
 APPLICANT: Shetty, Reshma  
 APPLICANT: Jones, Robert M.  
 TITLE OF INVENTION: Cone Snail Peptides  
 FILE REFERENCE: 2314-249  
 CURRENT APPLICATION NUMBER: US/10/072, 602B  
 CURRENT FILING DATE: 2002-02-11  
 PRIOR APPLICATION NUMBER: US 60/267, 408  
 PRIOR FILING DATE: 2001-02-09  
 NUMBER OF SEQ ID NOS: 638  
 SOFTWARE: Patentin version 3.0  
 SEQ ID NO 113  
 LENGTH: 75  
 TYPE: PRT  
 ORGANISM: *Conus geographus*  
 ;US-10-072-602B-113

RESULT 6  
 Query Match 42.9%; Score 162; DB 9; Length 75;  
 Best Local Similarity 56.1%; Pred. No. 1.5e-09; Mismatches 20; Indels 6; Gaps 2;  
 Matches 37; Conservative 3; Mismatches 20; Indels 6; Gaps 2;  
 Qy 1 MRLTCVIVAVVLLTACQLIT-ADDSRGQTOKHRAISDTKLS-MSTRCKGTGKPCSRAY 57  
 Db 1 MNLTCVILIAVFLTACQLIADDSDRDKOERTRAVRUDGM--RNPKGSKRNCGEGC 57  
 Qy 58 YNCCTG 63  
 Db 58 POCMG 63

RESULT 6  
 Sequence 207, Application US/09/49637A  
 ; Patent No. US2002017349A1  
 ; GENERAL INFORMATION:  
 ; APPLICANT: University of Utah Research Foundation  
 ; APPLICANT: Cognitix, Inc.  
 ; APPLICANT: Olivera, Baldomero M.  
 ; APPLICANT: Cartier, G. Edward  
 ; APPLICANT: Watkins, Maren  
 ; APPLICANT: Hillyard, David R.  
 ; APPLICANT: McIntosh, J. Michael  
 ; APPLICANT: Layer, Richard T.  
 ; APPLICANT: Jones, Robert M.  
 ; TITLE OF INVENTION: O-Superfamily Conotoxin Peptides  
 ; FILE REFERENCE: 2314-227  
 ; CURRENT APPLICATION NUMBER: US/09/749, 637A  
 ; CURRENT FILING DATE: 2000-12-28  
 ; PRIOR APPLICATION NUMBER: US 60/243, 412  
 ; PRIOR FILING DATE: 2000-10-27  
 ; PRIOR APPLICATION NUMBER: US60/219, 440  
 ; PRIOR FILING DATE: 2000-07-20  
 ; PRIOR APPLICATION NUMBER: US 60/214, 263  
 ; PRIOR FILING DATE: 2000-06-26  
 ; PRIOR APPLICATION NUMBER: US 60/173, 754  
 ; PRIOR FILING DATE: 1999-12-30  
 ; NUMBER OF SEQ ID NOS: 409  
 ; SOFTWARE: Patentin version 3.0  
 ; SEQ ID NO 207  
 ; LENGTH: 76  
 ; TYPE: PRT  
 ; ORGANISM: *Conus distans*  
 ; US-09-749-637A-207

RESULT 6  
 Sequence 207, Application US/09/49637A  
 ; Patent No. US2002017349A1  
 ; GENERAL INFORMATION:  
 ; APPLICANT: University of Utah Research Foundation  
 ; APPLICANT: Cognitix, Inc.  
 ; APPLICANT: Olivera, Baldomero M.  
 ; APPLICANT: Cartier, G. Edward  
 ; APPLICANT: Watkins, Maren  
 ; APPLICANT: Hillyard, David R.  
 ; APPLICANT: McIntosh, J. Michael  
 ; APPLICANT: Layer, Richard T.  
 ; APPLICANT: Jones, Robert M.  
 ; TITLE OF INVENTION: Cone Snail Peptides  
 ; FILE REFERENCE: 2314-249  
 ; CURRENT APPLICATION NUMBER: US/10/072, 602B  
 ; PRIOR APPLICATION NUMBER: US 60/267, 408  
 ; PRIOR FILING DATE: 2001-02-09  
 ; NUMBER OF SEQ ID NOS: 638  
 ; SOFTWARE: Patentin version 3.0  
 ; SEQ ID NO 65  
 ; LENGTH: 80  
 ; TYPE: PRT  
 ; ORGANISM: *Conus characteristicus*  
 ; US-10-072-602B-65

RESULT 8  
 Query Match 40.1%; Score 151.5; DB 9; Length 80;  
 Best Local Similarity 50.0%; Pred. No. 1.9e-08; Mismatches 24; Indels 3; Gaps 1;  
 Matches 34; Conservative 7; Mismatches 24; Indels 3; Gaps 1;  
 Qy 1 MRLTCVIVAVVLLTACQLIT-ADDSRGQTOKHRAISDTKLSMSTRCKGTGKPCSRAYNC 60  
 Db 1 MNLTCVILIAVFLTACQLNTADSDRDKOERTRAVRUDGM--RNPKGSKRNCGEGC 57  
 Qy 61 CTGSCSG 68  
 Db 58 ATRPCCSG 65

RESULT 8  
 Sequence 147, Application US/10072602B  
 ; Publication No. US20030109670A1  
 ; GENERAL INFORMATION:  
 ; APPLICANT: University of Utah Research Foundation  
 ; APPLICANT: Cognitix, Inc.  
 ; APPLICANT: Olivera, Baldomero M.  
 ; APPLICANT: McIntosh, J. Michael  
 ; APPLICANT: Watkins, Maren  
 ; APPLICANT: Garrett, James E.  
 ; APPLICANT: Cruz, Lourdes J.  
 ; APPLICANT: Grille, Michelle  
 ; APPLICANT: Schoenfeld, Robert M.  
 ; APPLICANT: Walker, Craig  
 ; APPLICANT: Shetty, Reshma  
 ; APPLICANT: Jones, Robert M.  
 ; TITLE OF INVENTION: Cone Snail Peptides  
 ; FILE REFERENCE: 2314-249  
 ; CURRENT APPLICATION NUMBER: US/10/072, 602B

Query Match 40.3%; Score 152.5; DB 9; Length 75;  
 Best Local Similarity 48.6%; Pred. No. 1.4e-08; Mismatches 36; Conservative 12; Mismatches 21; Indels 5; Gaps 4;







GenCore version 5.1.6  
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## Om protein - protein search, using sw model

Run on: July 1, 2003, 10:48:47 ; search time 7.03125 Seconds

(without alignments) #alignments 341.811 Million cell updates/sec

Title: US-09-910-082A-375

Perfect score: 153

Sequence: 1 CKGRKPCSRAYNCCTGCSRSGKC 25

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 283224 seqs, 96134422 residues

Total number of hits satisfying chosen parameters: 283224

Minimum DB seq length: 0

Maximum DB seq length: 200000000

Post-processing: Maximum Match 0%

Listing first 45 summaries

Database : PIR\_73::\*

1: pir1:\*

2: pir2:\*

3: pir3:\*

4: pir4:\*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

## SUMMARIES

8

Result No.	Score	Query Match	Length	DB ID	Description
1	121	79.1	25	2 JH0700	omega-conotoxin MVIIA [validated] - cone shell ( <i>Conus magus</i> )
2	105	68.6	25	2 JH0701	omega-conotoxin MV
3	98.5	64.4	29	2 JH0699	omega-conotoxin MV
4	94	61.4	29	2 A58537	omega-conotoxin MV
5	89.5	58.5	26	2 C44379	omega-conotoxin SV
6	67.5	44.1	29	2 A43648	omega-conotoxin GV
7	67.5	44.1	29	2 B44620	omega-conotoxin GV
8	66	43.1	26	2 T28626	variant-specifics
9	61.5	40.2	73	1 NTN866	omega-conotoxin GV
10	61.5	40.2	909	1 ORXIL1	LDL receptor 1 pre
11	61	39.9	78	2 S12513	delta-conotoxin Tx
12	60.5	39.5	139	2 S55085	probable membrane
13	60	39.2	24	2 B44379	omega-conotoxin SV
14	60	39.2	27	2 S19619	delta-conotoxin Tx
15	60	39.2	4753	1 A47437	LDL-receptor-relat
16	59.5	38.9	52	2 T10299	conotoxin-like pro
17	59	38.6	2150	2 T32497	hypothetical prote
18	58.5	38.2	909	1 ORXIL2	LDL receptor 2 pre
19	58	37.9	816	2 C62493	hypothetical prote
20	57.5	37.6	1291	2 T21694	hypothetical prote
21	56	36.6	972	2 A30363	glycoprotein GP330
22	56	36.6	1408	2 S16148	gene serrate prote
23	56	36.6	1650	2 S53457	dominant autoantig
24	56	36.6	4543	1 A53192	alpha-2-macroglobu
25	56	36.6	444	1 S02392	alpha-2-macroglobu
26	56	36.6	4660	2 T42737	gp330 protein, pre
27	55	35.9	385	2 A57785	preadipocyte facto
28	55	35.9	385	2 S5318	hemeocyte protein d
29	54.5	35.6	176	2 T17935	hypothetical prote

## ALIGNMENTS

RESULT 1  
JH0700omega-conotoxin MVIIA [validated] - cone shell (*Conus magus*)C:Species: *Conus magus* (magus cone)

C:Title: Conus magus (magus cone) #sequence-revision 17-Apr-1993 #text\_change 15-Sep-2000

C:Accession: JH0700; C60133; A34115

R:Hillyard, D.R.; Monje, V.D.; Mintz, I.M.; Bean, B.P.; Nadasi, I.; Ramachandran, J.

Neuron 9, 69-77, 1992

A:Title: A new conus peptide ligand for mammalian presynaptic Ca2+ channels.

A:Reference number: JH0699; MUIB:92337922; PMID:1352986

A:Accession: JH0700

A:Status: nucleic acid sequence not shown

A:Molecule type: mRNA

A:Residues: 1-25 &lt;HIL&gt;

R:Olivera, B.M.; Gray, W.R.; Zeikus, R.; McIntosh, J.M.; Varga, J.; Rivier, J.; de Sa

Science 230, 1338-1343, 1985 from fish-hunting cone snails.

A:Title: Peptide neurotoxins from fish-hunting cone snails.

A:Reference number: A33620; MUIB:86070213; PMID:4071055

A:Accession: C60133

A:Molecule type: protein

A:Residues: 1-25 &lt;OLR&gt;

R:Olivera, B.M.; Cruz, L.J.; de Santos, V.; Lecheminant, G.W.; Griffin, D.; Zeikus, R.

Biochemistry 26, 2086-2090, 1987

A:Title: Neuronal calcium channel antagonists. Discrimination between calcium channel

A:Reference number: A34115; MUIB:87299637; PMID:2441741

A:Contents: annotation

R: Nielsen, K.J.; Thomas, L.; Lewis, R.J.; Alewood, P.F.; Craik, D.J.

submitted to the Brookhaven Protein Data Bank, August 1996

A:Reference number: A67648; PDB:1MVI

A:Contents: annotation; conformation by {1}H-NMR, residues 1-25

R: Nielsen, K.J.; Thomas, L.; Lewis, R.J.; Alewood, P.F.; Craik, D.J.

J. Mol. Biol. 263, 297-310, 1995

A:Title: A consensus structure for omega-conotoxins with different selectivities for

A:Reference number: A58619; MUIB:97070382; PMID:8913308

A:Contents: annotation; conformation by {1}H-NMR

R: Kohno, T.; Kim, J.I.; Kobayashi, K.; Maeda, T.; Sato, K.

Biochemistry 34, 10256-10265, 1995

A:Title: Three-dimensional structure in solution of the calcium channel blocker omega

A:Reference number: A58627; MUIB:95367555; PMID:7640281

A:Contents: annotation; conformation by {1}H-NMR

C:Keywords: acetylcholine release inhibition; amidated carboxyl end; calcium channel

F:1-16, 8-20, 15-25; disulfide bonds; #status predicted

F:25; Modified site: amidated carboxyl end (Cys) #status experimental





QY	1	CKG-----TGKPCCSRRIAYNCCCTGSC--RSGKC	23
Db	183	CEGREPIKTDKPCSPLEFHCGSGSCTIHMSWKC	214

RESULT 11  
S12513 - *matrix* - *decorations* - *none shell* (*conus textile*)

N;delta-conotoxin IXVA precursor cone snail 'Conus' sp. KK-0  
N;Alternate names: conotoxin IXA, King-Kong peptide (KK-0)  
C;Species: *Conus textile* (cloth-of-gold cone)  
C;Date: 19-Mar-1997 #sequence\_revision 11-Apr-1997 #text\_change 16-Jul-1999  
C;Accession: S12513; S10103; S19553  
C;Accession: S12513; R;Woodward, S.R.; Cruz, L.J.; Olivera, B.M.; Hillyard, D.R.  
R;Woodward, S.R.; Cruz, L.J.; Olivera, B.M.; Hillyard, D.R.  
EMBO J. 9, 1015-1020, 1990  
A;Title: Constant and hypervariable regions in conotoxin propeptides.  
A;Reference number: S12513; MUID:90214607; PMID:1691090  
A;Accession: S12513  
A;Accession: S12513

Matches	11;	Conservative	1;	Mismatches	/;	Indels	1;	Seqs
Oy	1	CKGTGKPCSRAYNCTGSC	20					
Db	46	CKSPGSSCSPSYNCCR-SC	64					

A;Residue type: 1-78 <WOO>  
A;Cross-references: EMLI:XS3283; NID:910887; PIDN:CAA37377\_1; PID:910888  
R;Hillyard, D.R.; Olivera, B.M.; Woodward, S.; Copuz, G.P.; Gray, W.R.; Ramilo, C.A.  
Biochemistry 28, 3583-361, 1989  
A;Title: A molluscivorous Conus toxin: conserved frameworks in conotoxins.  
A;Reference number: A30103; MUID:89207553; PMID:2706261  
A;Accession: A30103  
A;Molecule type: protein  
A;Molecule type: protein

LDL receptor 1 precursor - African clawed frog  
Species: *Xenopus laevis* (African clawed frog)  
C;Date: 31-Dec-1993 #sequence\_revision 31-Dec-1993

Article: <https://pubmed.ncbi.nlm.nih.gov/92104183/>; PMID: 17610588  
A; Reference number: S19553; MUID: 92104183;  
A; Accession: S19553  
A; Moltype: protein

A; Residues: 52-78 <FAI>  
 C; Superfamily: omega-conotoxin  
 C; Kevords: neurotoxin; sodium channel inhibitor; venom

F-1-22/Domain: signal sequence #status predicted <SIG>  
 F-23-51/Domain: propeptide #status predicted <PRO>  
 F-78/Product: delta-conotoxin TxIVIA #status experimental <MAT>

F, 53-68, 60-72, 67-77/Disulfide bonds: #status predicted

Best Local Similarity 45.0%; Pred. No. 2.6; Matches 9; Conservative 4; Mismatches 7; Indels 0; Gaps 0;

ପରିବାର ୧୨  
ପରିବାର ୧୩

NAME: *Saccharomyces cerevisiae*  
SPECIES: *Saccharomyces cerevisiae*  
CDB: 08-Jul-1995 #sequence\_revision 19-Oct-1995 #text\_change  
CDB: 08-Jul-1995 #sequence\_revision 19-Oct-1995 #text\_change  
ACC: S54085

R; Badcock, K.; Churcher, C.M. submitted to the EMBL Data Library, May 1995

Accession: S54055  
A;Molecule type: DNA  
A;Residues: 1-139 <BAD>

A;Cross-references: EMBL:49219; NID:9805025; PID:9805044; GSPDB:GU000101; MIR3-11000  
A;Experimental source: strain AB972  
C;Genetics:

Query Match Similarity 40.2%; Score 61.5%; DB 1; Length 909; Best Local Matches 40.6%; Pred. No. 10; Matches 13; Conservative 5; Mismatches 7; Indels 7; Gaps 2

Query Match 39.5%; Score 60.5; DB 2; Length 139;  
 Best Local Similarity 43.3%; Pred. No. 4.2; Indels 9; Gaps 1;  
 Matches 13; Conservative 0; Mismatches 8; DB 15  
 YY 5 GPRCSR-----NYNCCTGSCRRSSKC 25  
 ||||||| ||||| ||| |||  
 100 GPRCSRWRLLKKRAYCCCLFCCSSYC 129  
 ||||||| ||||| ||| |||  
 RESULT 13  
 444379 Omega-conotoxin SVIA - cone shell (Conus striatus)  
 ;Species: Conus striatus (striated cone)  
 ;Alternate names: SNX-157  
 ;Accession: B44379  
 ;Reference number: A44379; MUID:93003172; PMID:1390774  
 ;Title: Novel alpha- and omega-conotoxins from Conus striatus venom.  
 ;Accession: B44379  
 ;Molecule type: protein  
 ;Residues: 1-24 <RAN>  
 ;Cross-references: CAS:137705-81-1  
 ;Experimental source: venom  
 ;Note: sequence extracted from NCBI backbone (NCBIP:116001); structure confirmed by che  
 ;Comment: This omega-conotoxin blocks presynaptic calcium channels.  
 ;Superfamily: omega-conotoxin  
 ;Keywords: acetylcholine release inhibition; amidated carboxyl end; calcium channel int  
 ;24/Modified site: amidated carboxyl end (Thr) #status experimental  
 Query Match 39.2%; Score 60; DB 2; Length 24;  
 Best Local Similarity 40.0%; Pred. No. 1.6; Indels 2; Gaps 1;  
 Matches 10; Conservative 3; Mismatches 10; Accession: S19619  
 1 CKGKGKCSRRIAYNCCGSCRSKC 25  
 ||| : ||| : | | | |||  
 1 CRSSGSPCG--VNSICCGRCYRGKC 23  
 RESULT 14  
 19619  
 Delta-conotoxin TxIB - cone shell (Conus textile)  
 ;Species: Conus textile (cloth-of-gold cone)  
 ;Accession: S19619  
 ;Title: Mollusc-specific toxins from the venom of Conus textile neovicarius.  
 ;Date: 19-Mar-1997 #sequence\_revision 11-Apr-1997 #text\_change 16-Jul-1999  
 ;Accession: S19619  
 ;Molecule type: protein  
 ;Residues: 1-27 <FA>  
 ;Superfamily: omega-conotoxin  
 ;Keywords: neurotoxin; sodium channel inhibitor; venom  
 ;Reference number: S19553; MUID:92104183; PMID:1761058  
 Query Match 39.2%; Score 60; DB 2; Length 27;  
 Best Local Similarity 45.0%; Pred. No. 1.7; Indels 0; Gaps 0;  
 Matches 9; Conservative 4; Mismatches 7; Accession: S19619  
 1 CKGKGKCSRRIAYNCCGSC 20  
 ||| : ||| : | | | |||  
 2 CRSSGSPCG--VNSICCGRCYGC 21  
 RESULT 15  
 444379 Delta-receptor-related protein - Caenorhabditis elegans  
 ;Species: Caenorhabditis elegans  
 ;Accession: B44379  
 ;Title: A gene for a low density lipoprotein receptor-related protein in the nematod  
 ;Reference number: A47437; MUID:93281621; PMID:8506301  
 ;Accession: A47437  
 ;Molecule type: DNA  
 ;Cross-references: GB:956150; NID:9156359; PIDN:AA28105.1; PID:9156360  
 ;Note: nucleotide sequence not given; translation not complete in this paper  
 submitted to the EMBL Data Library, July 1992  
 ;Description: A gene for an LDL receptor-related protein (LPR) in the nematode C.elegans  
 ;Reference number: S27801  
 ;Accession: S27801  
 ;Molecule type: DNA  
 ;Residues: 1-4753 <PO2>  
 ;Cross-references: EMBL:96150; NID:9156359; PIDN:AA28105.1; PID:9156360  
 ;Experimental source: clone F59d11  
 ;Genetics:  
 ;Gene: LPR  
 ;Map position: 1  
 ;Intons: 31/1; 88/1; 132/1; 172/3; 219/1; 298/1; 463/2; 526/2; 585/3; 780/2; 874/2;  
 15/1  
 ;Superfamily: alpha-2-macroglobulin receptor; EGF homology; LDL receptor ligand-bind  
 ;Keywords: tandem repeat; transmembrane protein  
 ;Accession: S19619  
 ;Title: Mollusc-specific toxins from the venom of Conus textile neovicarius.  
 ;Date: 19-Mar-1997 #sequence\_revision 11-Apr-1997 #text\_change 16-Jul-1999  
 ;Accession: S19619  
 ;Molecule type: protein  
 ;Residues: 1-27 <FA>  
 ;Superfamily: omega-conotoxin  
 ;Keywords: neurotoxin; sodium channel inhibitor; venom  
 ;Reference number: S19553; MUID:92104183; PMID:1761058  
 Query Match 39.2%; Score 60; DB 2; Length 27;  
 Best Local Similarity 45.0%; Pred. No. 1.7; Indels 0; Gaps 0;  
 Matches 9; Conservative 4; Mismatches 7; Accession: S19619  
 1 CKGKGKCSRRIAYNCCGSC 20  
 ||| : ||| : | | | |||  
 2 CRSSGSPCG--VNSICCGRCYGC 21  
 C;Accession: A44379; S27801; T21547  
 R;Yochim, J.; Greenwald, I.  
 Proc. Natl. Acad. Sci. U.S.A. 90, 4572-4576, 1993  
 A;Title: A gene for a low density lipoprotein receptor-related protein in the nematod  
 A;Reference number: A47437; MUID:93281621; PMID:8506301  
 A;Accession: A47437  
 A;Molecule type: DNA  
 A;Residues: 1-4753 <PO2>  
 A;Cross-references: GB:956150; NID:9156359; PIDN:AA28105.1; PID:9156360  
 A;Note: nucleotide sequence not given; translation not complete in this paper  
 submitted to the EMBL Data Library, July 1992  
 A;Description: A gene for an LDL receptor-related protein (LPR) in the nematode C.elegans  
 A;Reference number: S27801  
 A;Accession: S27801  
 A;Molecule type: DNA  
 A;Residues: 1-4753 <PO2>  
 A;Cross-references: EMBL:96150; NID:9156359; PIDN:AA28105.1; PID:9156360  
 A;Experimental source: clone F59d11  
 A;Genetics:  
 A;Gene: LPR  
 A;Map position: 1  
 A;Intons: 31/1; 88/1; 132/1; 172/3; 219/1; 298/1; 463/2; 526/2; 585/3; 780/2; 874/2;  
 15/1  
 C;Superfamily: alpha-2-macroglobulin receptor; EGF homology; LDL receptor ligand-bind  
 C;Keywords: tandem repeat; transmembrane protein  
 F;53-37/Domain: LDL receptor ligand-binding repeat homology <LDL1>  
 F;92-131/Domain: LDL receptor ligand-binding repeat homology <LDL2>  
 F;138-175/Domain: LDL receptor ligand-binding repeat homology <LDL3>  
 F;182-218/Domain: LDL receptor ligand-binding repeat homology <LDL4>  
 F;223-257/Domain: LDL receptor ligand-binding repeat homology <LDL5>  
 F;262-297/Domain: LDL receptor ligand-binding repeat homology <LDL6>  
 F;302-336/Domain: EGF homology <EGF1>  
 F;105a-1095/Domain: LDL receptor ligand-binding repeat homology <LDL7>  
 F;110-113B/Domain: LDL receptor ligand-binding repeat homology <LDL8>  
 F;114B-1182/Domain: LDL receptor ligand-binding repeat homology <LDL9>  
 F;118B-1223/Domain: LDL receptor ligand-binding repeat homology <LD10>  
 F;122B-1263/Domain: LDL receptor ligand-binding repeat homology <LD11>  
 F;127B-1307/Domain: LDL receptor ligand-binding repeat homology <LD12>  
 F;131B-1350/Domain: LDL receptor ligand-binding repeat homology <LD13>  
 F;135B-1396/Domain: LDL receptor ligand-binding repeat homology <LD14>  
 F;1441-1475/Domain: EGF homology <EGF>  
 F;161B-1654/Domain: LDL receptor YWRYD-containing ligand-binding repeat homology <YW33>  
 F;179B-1829/Domain: LDL receptor ligand-binding repeat homology <LD15>  
 F;283B-2868/Domain: LDL receptor ligand-binding repeat homology <LD16>  
 F;287B-2912/Domain: LDL receptor ligand-binding repeat homology <LD17>  
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 F;300B-3044/Domain: LDL receptor ligand-binding repeat homology <LD20>  
 F;304B-3093/Domain: LDL receptor ligand-binding repeat homology <LD21>  
 F;310B-3135/Domain: LDL receptor ligand-binding repeat homology <LD22>  
 F;314B-3174/Domain: LDL receptor ligand-binding repeat homology <LD23>  
 F;318B-3222/Domain: LDL receptor ligand-binding repeat homology <LD24>  
 F;358B-3623/Domain: EGF homology <EGX1>  
 F;362B-3666/Domain: LDL receptor ligand-binding repeat homology <LD25>  
 F;367B-3705/Domain: LDL receptor ligand-binding repeat homology <LD26>  
 F;370B-3745/Domain: LDL receptor ligand-binding repeat homology <LD27>  
 F;375B-3788/Domain: LDL receptor ligand-binding repeat homology <LD28>  
 F;379B-3830/Domain: LDL receptor ligand-binding repeat homology <LD29>  
 F;383B-3871/Domain: LDL receptor ligand-binding repeat homology <LD30>  
 F;387B-3912/Domain: LDL receptor ligand-binding repeat homology <LD31>  
 F;391B-3951/Domain: LDL receptor ligand-binding repeat homology <LD32>  
 F;395B-3995/Domain: LDL receptor ligand-binding repeat homology <LD33>  
 F;400B-4040/Domain: LDL receptor ligand-binding repeat homology <LD34>  
 F;404B-4083/Domain: LDL receptor ligand-binding repeat homology <LD35>

Tue Jul 1 11:02:05 2003

us-09-910-082a-375.rpr

Page 6

F:4092-4130/Domain: EGF homology <EGF2>  
F:4343-4386/Domain: LDL receptor YWTD-containing repeat homology <YW38>

Query Match 39.2%; Score 60; DB 1; Length 4753;  
Best Local Similarity 43.5%; Pred. No. 42;  
Matches 10; Conservative 2; Mismatches 11; Indels 0; Gaps 0;  
Oy 1 CKGNGKPESRRIAYNCCTGSCRS 23  
| || :|| ; | | |  
Db 3871 CGGTRPCSESEFRNDGKCI PG 3893

Search completed: July 1, 2003, 10:53:26  
Job time : 8.03125 secs

Run on: July 1, 2003, 10:43:27 ; search time 6.77083 Seconds  
 (without alignments)  
 153.143 Million cell updates/sec

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OM protein - protein search, using sw model

Perfect score: US-09-910-082A-375

Sequence: CKGTGKPCSRAYNCCTGSCRSGRC 25

Scoring table: BLOSUM62

Gappen 10.0 , Gapext 0.5

searched: 112892 seqs, 41476328 residues

Total number of hits satisfying chosen parameters: 112892

Minimum DB seq length: 0

Maximum DB seq length: 200000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database : SwissProt\_40:\*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

**SUMMARIES**

Result No.	Score	Query	Match	Length	DB	ID	Description
1	142	92.8	71	1	CXO3_CONST	09z2k2	conus stria
2	121	79.1	71	1	CXO4_CONST	P05484	conus magus
3	112	73.2	71	1	CXO5_CONST	P88917	conus catius
4	105	68.6	25	1	CXO6_CONST	P05485	conus magus
5	104.5	68.3	26	1	CXO7_CONST	P88918	conus conso
6	101	66.0	25	1	CXO7_CONST	P88916	conus catus
7	99	64.7	27	1	CXO7_CONST	P37300	conus magus
8	98.5	64.4	29	1	CXO7_CONST	P2881	conus stria
9	94	61.4	29	1	CXO7_CONST	P88920	conus catus
10	89.5	58.5	72	1	CXO7_CONST	P88914	conus radia
11	84	54.9	73	1	CXO7_CONST	P05483	conus geogr
12	69.5	45.4	27	1	CXO7_CONST	P88914	conus radia
13	67.5	44.1	29	1	CXO7_CONST	P056714	conus textil
14	62.5	40.8	26	1	CXO7_CONST	P056722	conus geogr
15	61.5	40.2	73	1	CXO6_CONST	Q99087	xenopus lae
16	61.5	40.2	909	1	LDL1_XENLA	P18511	conus textil
17	61	39.9	78	1	CXO4_CONST	P24159	conus textil
18	60	39.2	27	1	CXO5_CONST	P28880	conus stria
19	60	39.2	72	1	CXO7_CONST	Q04833	caenorhabdi
20	60	39.2	4753	1	LRP_CAEEL	P88915	conus tulip
21	59.5	38.9	26	1	CXO6_CONST	P10286	orygia pseu
22	59.5	38.9	52	1	CXO2_NPWP	Q9zz15	conus stria
23	59	38.6	72	1	CXO5_CONST	Q9zz15	conus stria
24	58.2	38.2	892	1	LDL2_XENLA	Q99088	xenopus lae
25	58	37.9	72	1	CXO1_CONST	Q9zz1	conus stria
26	57.5	37.6	1291	1	YCB1_CAEEL	Q19981	caenorhabdi
27	56.5	36.9	37	1	TXO2_HADVE	P81599	hadrovache
28	56	36.6	1408	1	SERR_DROME	P18168	drosophila
29	56	35.6	4543	1	LRP1_CHICK	P96157	gallus gall
30	56	36.6	4544	1	LRP1_HUMAN	Q07954	homo sapien
31	56	36.6	4660	1	LRP2 RAT	P98158	ratnor
32	55	35.9	385	1	DUK_MOUSE	Q00163	mus musculu
33	55	35.3	864	1	LDLR_MOUSE	P35951	mus musculu

**ALIGNMENTS**



AC P58917;  
 DR 15-JUN-2002 (Rel. 41, Created)  
 DT 15-JUN-2002 (Rel. 41, Last sequence update)  
 DT 15-JUN-2002 (Rel. 41, Last annotation update)  
 DE Omega conotoxin CVIA precursor.  
 OS Conus catus (Cat cone).  
 OC Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;  
 OC Neogastropoda; Conoidea; Conidae; conus.  
 OC NCBI\_TaxID=101291;  
 RN [1] SEQUENCE FROM N A., SEQUENCE OF 46-70, AND SYNTHESIS.  
 RC TISSUE:venom duct, and venom;  
 RX PubMed=10938268;  
 RA Lewis R.J., Nielsen K.J., Craik D.J., Loughnan M.L., Adams D.A.,  
 RA Sharpe I.A., Luchian T., Adams D.J., Bond T., Thomas L., Jones A.,  
 RA Matheson J.-L., Drinkerwater R., Andrews P.R., Alewood P.F.,  
 RA "Novel omega conotoxins from *Conus catus* discriminate among neuronal  
 calcium channel subtypes.";  
 RL J. Biol. Chem. 275:35335-35344(2000).  
 CC -I- FUNCTION: Omega-conotoxins act at presynaptic membranes, they bind  
 CC and block voltage-sensitive calcium channels. (VSCC) (BY  
 CC similarity). This toxin blocks N-type calcium channels.  
 CC -I- SUBCELLULAR LOCATION: Secreted.  
 CC -I- TISSUE SPECIFICITY: Expressed by the venom duct.  
 CC -I- SIMILARITY: BELONGS TO THE O-SUPERFAMILY OF CONOTOXINS. OMEGA-TYPE  
 CC FAMILY.  
 KW Presynaptic neurotoxin; Neurotoxin; Toxin; Calcium channel inhibitor;  
 FT Anidation; Signal; POTENTIAL.  
 FT SIGNAL 1 22  
 FT PROPEP 23 45  
 FT PEPTIDE 46 70  
 FT DISULFID 46 61  
 FT DISULFID 53 65  
 FT DISULFID 60 70  
 FT MOD\_RES 70 70  
 SQ SEQUENCE 71 AA; B39D9CTC74986D01 CRC64;  
 Query Match 73.2%; Score 112; DB 1; Length 71;  
 Best Local Similarity 68.0%; Pred. No. 2.7e-07;  
 Matches 17; Conservative 3; Mismatches 5; Indels 0; Gaps 0;  
 OY 1 CKRGKGPCSRRIAYNCCTGCSRSGKC 25  
 DB 46 CKSTGASCRRTSYDCCGCSRSGRC 70

RESULT 4

CXOB\_CONMA  
 ID CXOB\_CONMA  
 AC P05485;  
 CC 01-NOV-1988 (Rel. 09, Created)  
 DT 01-NOV-1988 (Rel. 09, Last sequence update)  
 DT 15-JUN-2002 (Rel. 41, Last annotation update)  
 DE Omega conotoxin MVIIb (SNK-159).  
 OS *Conus magus* (Magus cone).  
 OC Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;  
 OC Neogastropoda; Conoidea; Conidae; conus.  
 OC NCBI\_TaxID=6492;  
 RN [1] SEQUENCE.  
 RX MEDLINE=87399637; PubMed=2441741;  
 RA Olivera B.M., Cruz L.J., de Santos V., Lecheminant G.W., Griffin D.,  
 RA Zeikus R.D., McIntosh J.M., Galyean R., Varga J., Gray W.R.,  
 RA Rivier J.E.;  
 RT "Neuronal calcium channel antagonists. discrimination between calcium  
 channel subtypes using omega-conotoxin from *Conus magus* venom.";  
 RL Biochemistry 26:2086-2090(1987).  
 CC -I- FUNCTION: Omega-conotoxins act at presynaptic membranes, they bind  
 and block voltage-sensitive calcium channels (VSCC).  
 CC -I- SUBCELLULAR LOCATION: Secreted.  
 CC -I- TISSUE SPECIFICITY: Expressed by the venom duct.  
 CC -I- SIMILARITY: BELONGS TO THE O-SUPERFAMILY OF CONOTOXINS. OMEGA-TYPE  
 FAMILY.

RESULT 5

CXOC\_CONCT  
 ID CXOC\_CONCT  
 AC P58919;  
 CC 15-JUN-2002 (Rel. 41, Created)  
 DT 15-JUN-2002 (Rel. 41, Last sequence update)  
 DT 15-JUN-2002 (Rel. 41, Last annotation update)  
 DE Omega-conotoxin CVIC.  
 OS Conus catus (Cat cone).  
 OC Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;  
 OC Neogastropoda; Conoidea; Conidae; conus.  
 OC NCBI\_TaxID=101291;  
 RN [1] SEQUENCE, AND SYNTHESIS.  
 RC TISSUE:venom;  
 RX PubMed=1093268;  
 RA Lewis R.J., Nielsen K.J., Craik D.J., Loughnan M.L., Adams D.A.,  
 RA Sharpe I.A., Luchian T., Adams D.J., Bond T., Thomas L., Jones A.,  
 RA Matheson J.-L., Drinkerwater R., Andrews P.R., Alewood P.F.,  
 RA "Novel omega-conotoxins from *Conus catus* discriminate among neuronal  
 calcium channel subtypes.";  
 RL J. Biol. Chem. 275:35335-35344(2000).  
 CC -I- FUNCTION: Omega-conotoxins act at presynaptic membranes, they bind  
 CC and block voltage-sensitive calcium channels (VSCC) (BY  
 CC similarity). This toxin blocks N-, P-, and Q-type calcium  
 channels.  
 CC -I- SUBCELLULAR LOCATION: Secreted.  
 CC -I- TISSUE SPECIFICITY: Expressed by the venom duct.  
 CC -I- SIMILARITY: BELONGS TO THE O-SUPERFAMILY OF CONOTOXINS. OMEGA-TYPE  
 CC FAMILY.  
 KW Presynaptic neurotoxin; Neurotoxin; Toxin; Calcium channel inhibitor;  
 FT Anidation.  
 FT DISULFID 1 16  
 FT DISULFID 8 20  
 FT DISULFID 15 26  
 FT MOD\_RES 26 26  
 SQ SEQUENCE 26 AA; B56FC382335C4A8B CRC64;  
 Query Match 68.3%; Score 104.5; DB 1; Length 26;  
 Best Local Similarity 65.4%; Pred. No. 9.9e-07;  
 Matches 17; Conservative 4; Mismatches 4; Indels 1; Gaps 1;

RESULT 6

CXOB\_CONCT  
 ID CXOB\_CONCT  
 AC P58918;  
 CC 15-JUN-2002 (Rel. 41, Created)  
 DT 15-JUN-2002 (Rel. 41, Last sequence update)



CC -!- TISSUE SPECIFICITY: Expressed by the venom duct.  
 CC -!- SIMILARITY: BELONGS TO THE O-SUPERFAMILY OF CONOTOXINS. OMEGA-TYPE  
 CC FAMILY.  
 CC -----  
 CC This SWISS-PROT entry is copyright. It is produced through a collaboration  
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 CC -----  
 DR EMBL; S40826; AAB22674.1; -.  
 DR PIR; JH0699; JH0699.  
 DR PDB; 1OMN; 01-DEC-95.  
 DR PDB; 1CNM; 31-MAY-00.  
 KW presynaptic neurotoxin; Neurotoxin; Toxin; Calcium channel inhibitor;  
 KW Hydroxylamine; Amidation; 3D-structure.  
 FT NON\_TER 1 1  
 FT PROPEP <1 2  
 FT PEPTIDE 3 28 OMEGA-CONOTOXIN MVVIC.  
 FT BINDING 15 15 ESSENTIAL FOR CALCIUM CHANNEL BINDING.  
 FT DISULFID 3 18  
 FT DISULFID 10 22  
 FT DISULFID 17 28 HYDROXYLATION (PROBABLE).  
 FT MOD\_RES 9 9 AMIDATION (G-29 PROVIDE AMIDE GROUP).  
 FT MUTAGEN 28 28 Y>A; HIGH DECREASE IN BINDING.  
 SO SEQUENCE 15 15 AC7A68948474728A CRC64;  
 Query Match 64.4%; Score 98.5%; DB 1; Length 29;  
 Best Local Similarity 61.5%; Pred. No. 5. 6e-06; 3; Mismatches 6; Indels 1; Gaps 1;  
 Matches 16; Conservative 13;  
 Qy 1 CKGTGKPCSRRIAVNCCTGSC-RSGKC 25  
 Db 3 CKGKGAPCRKTMWDCCGSGCGRGKC 28  
 RESULT 9  
 CXOD\_CONMA  
 ID CXOD\_CONMA STANDARD; PRT; 29 AA.  
 AC 026350; 15-DEC-1998 (Rel. 37, Created)  
 DT 15-DEC-1998 (Rel. 37, Last sequence update)  
 DT 15-JUN-2002 (Rel. 41, Last annotation update)  
 DE Omega-conotoxin MVIIId precursor (SNX-238) (Fragment).  
 OS Conus magus (Matus cone)  
 OC Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;  
 OC Neogastropoda; Conoidea; Conidae; Conus;  
 OC NCBI\_TaxID=6492;  
 RN [1]  
 RP SEQUENCE FROM N.A.  
 RX MEDLINE=94150815; PubMed=8107958;  
 RA Monje V.D., Haack J.A., Naisbitt S.R., Miljanich G., Ramachandran J.,  
 RA Naszadi L., Olivera B.M., Hillyard D.R., Gray W.R.,  
 RA "A new Conus peptide ligand for Ca channel subtypes.",  
 RL Neuropharmacology 32:1141-1149(1993).  
 RN [2]  
 RP STRUCTURE BY NMR.  
 RX PubMed=9920728;  
 RA Clever C., Vaquez A., Sevilla J.M., Bruix M., Gago F., Garcia A.G.,  
 RA Sevilla P.;  
 RT "Solution structure determination by two-dimensional 1H NMR of  
 omega-conotoxin MVIIId, a calcium channel blocker peptide.";  
 RL Blochem. Biophys. Res. Commun. 254:2-35(1999).  
 CC -!- FUNCTION: Omega-conotoxins act at presynaptic membranes, they bind  
 CC and block voltage-sensitive calcium channels (VGCC). This toxin  
 CC -!- SUBCELLULAR LOCATION: Secreted.  
 CC -!- TISSUE SPECIFICITY: Expressed by the venom duct.  
 CC -!- SIMILARITY: BELONGS TO THE O-SUPERFAMILY OF CONOTOXINS. OMEGA-TYPE  
 CC FAMILY.  
 CC -----  
 DR EMBL; S69322; AAB29902.1; -.  
 DR HSSP; P05484; IAVI.  
 KW presynaptic neurotoxin; Neurotoxin; Toxin; Calcium channel inhibitor;  
 KW Hydroxylamine; Amidation.  
 FT NON\_TER 1 1  
 FT PROPEP <1 3  
 FT PEPTIDE 4 28 OMEGA-CONOTOXIN MVIID.  
 FT BINDING 19 28 AMIDATION (G-29 PROVIDE AMIDE GROUP).  
 FT DISULFID 1 23  
 FT DISULFID 11 18  
 FT DISULFID 18 28  
 FT MOD\_RES 28 28 AMIDATION (G-29 PROVIDE AMIDE GROUP).  
 FT PEPTIDE 28 3104 MW; 9B04B2E8A3779CB22 CRC64;  
 SO SEQUENCE 29 AA; 3104 MW; 9B04B2E8A3779CB22 CRC64;  
 Query Match 61.4%; Score 94; DB 1; Length 29;  
 Best Local Similarity 61.0%; Pred. No. 1.9e-05; 4; Mismatches 8; Indels 0; Gaps 0;  
 Matches 13; Conservative 13;  
 Qy 1 CKGTGKPCSRRIAVNCCTGSC-RSGKC 25  
 Db 4 CGGRGASCRKTMYNCSCGSCNRRGC 28  
 RESULT 10  
 CXOB\_CONST  
 ID CXOB\_CONST STANDARD; PRT; 72 AA.  
 AC P28881; Q9UB25; 01-DEC-1992 (Rel. 24, Created)  
 DT 16-OCT-2001 (Rel. 40, Last sequence update)  
 DT 15-JUN-2002 (Rel. 41, Last annotation update)  
 DE Omega-conotoxin SVIB precursor (SNX-183).  
 OS Conus striatus (Striated cone).  
 OC Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;  
 OC Neogastropoda; Conoidea; Conidae; Conus;  
 OC NCBI\_TaxID=6493;  
 RN [1]  
 RP SEQUENCE FROM N.A.  
 RC TISSUE-Venom duct;  
 RX MEDLINE=20037955; PubMed=10573284;  
 RA Lu B.-S., Yu F., Zhao D., Huang P.-T., Huang C.-F.;  
 RT "Conopeptides from Conus striatus and Conus textile by cDNA  
 RT cloning.";  
 RL Peptides 20:1139-1144(1999).  
 RN [2]  
 RP SEQUENCE OF 46-71, AND SYNTHESIS.  
 RC TISSUE-Venom;  
 RX MEDLINE=93003172; PubMed=1390774;  
 RA Ramilo C., Zafaralla G.C., Nadsdi L., Hammerland L.G., Yoshikami D.,  
 RA Gray W.R., Kristapati R., Ramachandran J., Miljanich G., Olivera B.M.,  
 RA Cruz L.J.;  
 RA "Novel alpha- and omega-conotoxins from Conus striatus venom.";  
 RL Blochemistry 31:1919-1926(1992).  
 RN [3]  
 RP STRUCTURE BY NMR.  
 RX MEDLINE=97070382; PubMed=8913308;  
 RA Nielsen K.J., Thomas L., Lewis R.J., Alewood P.F., Craik D.J.;  
 RT "A consensus structure for omega-conotoxins with different  
 RT selectivities for voltage-sensitive calcium channel subtypes:  
 RT comparison of MVIIA, SVIB and SNX-202.";  
 RT J. Mol. Biol. 263:297-310(1996).  
 CC -!- FUNCTION: Omega-conotoxins act at presynaptic membranes, they bind  
 CC and block voltage-sensitive calcium channels (VGCC). This toxin  
 CC -!- blocks N-, P-, and Q-type calcium channels.  
 CC -!- SUBCELLULAR LOCATION: Secreted.  
 CC -!- TISSUE SPECIFICITY: Expressed by the venom duct.  
 CC FAMILY.

-1- SIMILARITY: BELONGS TO THE O-SUPERFAMILY OF CONOTOXINS. OMEGA-TYPE FAMILY.

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CC EMBL; AF14346; AAD31906; -

DR PIR; C44379; C44379.

DR PDB; 1MVJ; 12-AUG-97.

DR Interpro; IPR04214; Conotoxin.

DR Pfam; PF02950; Conotoxin; 1.

KW Presynaptic neurotoxin; Neurotoxin; Toxin; Calcium channel inhibitor; Amidation; Signal; 3D-structure.

FT SIGNAL 1 22 POTENTIAL.

FT PROPEP 23 45 OMEGA-CONOTOXIN SVIB.

FT DISULFID 46 61

FT DISULFID 53 65

FT DISULFID 60 71 AMIDATION (G-72 PROVIDE AMIDE GROUP).

FT MOD\_RES 71 71 AMIDATION (G-72 PROVIDE AMIDE GROUP).

SQ 72 AA; 7741 MW; 1F75346AAD39908 CRC64;

Query Match 58.5%; Score 89.5%; DB 1; Length 72; Best Local Similarity 57.7%; Pred. No. 0.0013; Matches 15; Conservative 5; Mismatches 5; Indels 1; Gaps 1;

QY 1 CKGGKPCSRAYNCTGSC-RSGKC 25

QY 46 CKLKGQSCRTSIDCCSGSGCRGK 71

Db

RESULT 11

CX06\_CONC STANDARD; PRT; 73 AA.

AC P59920; DT 15-JUN-2002 (Rel. 41, Created) 15-JUN-2002 (Rel. 41, Last sequence update) 15-JUN-2002 (Rel. 41, Last annotation update)

DT 15-JUN-2002 (Rel. 41, Last sequence update) 15-JUN-2002 (Rel. 41, Last annotation update)

RL PATENT NUMBER US5051403, 24-SEP-1991.

CC -1- FUNCTION: Omega-conotoxins act at presynaptic membranes, they bind and block voltage-sensitive calcium channels (VSCCs).

CC -1- SUBCELLULAR LOCATION: Secreted.

CC -1- TISSUE SPECIFICITY: Expressed by the venom duct.

CC -1- SIMILARITY: BELONGS TO THE O-SUPERFAMILY OF CONOTOXINS. OMEGA-TYPE FAMILY.

KW Presynaptic neurotoxin; Neurotoxin; Toxin; Calcium channel inhibitor;

FT DISULFID 1 16

FT DISULFID 8 19

FT DISULFID 15 26

FT MOD\_RES 4 4 HYDROXYLATION

FT MOD\_RES 7 7 HYDROXYLATION

SQ SEQUENCE 27 AA; 2887 MW; F554C1F8A01A8BAF CRC64;

Query Match 45.4%; Score 69.5%; DB 1; Length 27; Best Local Similarity 51.9%; Pred. No. 0.015; Matches 14; Conservative 3; Mismatches 7; Indels 3; Gaps 2

QY 1 CKGGKPCSRAYNCTGSC-RSGKC 25

QY 1 CKPPGSPCRVSYVNCSC-SOKSYNKKC 26

Db

RESULT 13

CX07\_CONC STANDARD; PRT; 29 AA.

AC P05483; DT 01-NOV-1988 (Rel. 09, Created) 01-NOV-1988 (Rel. 09, Last sequence update) 15-JUN-2002 (Rel. 41, Last annotation update)

DT 01-NOV-1988 (Rel. 09, Last sequence update) 15-JUN-2002 (Rel. 41, Last annotation update)

DE Omega-conotoxins GVIIA/GVIIIB (SNX-178).

OS Conus geographus (Geography cone).

OC Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda; Neogastropoda; Conoidea; Conidae; Conus.

OX NCBI\_TaxID=6491;

RN [1]

RP SEQUENCE FROM N.A., SYNTHESIS, AND STRUCTURE BY NMR

RP TISSUE=Venom duct, and Venom;

RX Pubmed=10938268;

RA Lewis R.J., Nielsen K.J., Craik D.J., Loughran M.L., Adams D.A., Sharpe I.A., Buchan T., Adams D.J., Bond T., Thomas L., Jones A., Matheson J.-L., Drinkwater R., Andrews P.R., Alewood P.F.;

RA Novel omega conotoxins from *Conus catus* discriminate among neuronal calcium channel subtypes. *J. Biol. Chem.* 275:35335-35344 (2000).

CC -1- FUNCTION: Omega-conotoxins act at presynaptic membranes, they bind and block voltage-sensitive calcium channels (VSCCs) (By similarity). This toxin blocks N-type calcium channels.

CC -1- SUBCELLULAR LOCATION: Secreted.

CC -1- TISSUE SPECIFICITY: Expressed by the venom duct.

CC -1- SIMILARITY: BELONGS TO THE O-SUPERFAMILY OF CONOTOXINS. OMEGA-TYPE FAMILY.

CC Presynaptic neurotoxin; Neurotoxin; Toxin; Calcium channel inhibitor; Amidation; Signal.

FT SIGNAL 1 22 POTENTIAL.

FT PROPEP 23 45 OMEGA-CONOTOXIN CVID.

FT PEPTIDE 46 72 BY SIMILARITY.

FT DISULFID 46 61

FT DISULFID 53 65

RN [1]

RP SEQUENCE; MEDLINE=86070213; PubMed=4071055;

RA Olivera B.M., Gray W.R., Zeikus R.D., McIntosh J.M., Varga J., Rivier J.E., de Santos V., Cruz L.J.;

RA "Peptide neurotoxins from fish-hunting cone snails.";

RL	science 230:1338-1343(1985).
CC	-i- FUNCTION: Omega-conotoxins act at presynaptic membranes, they bind and block voltage-sensitive calcium channels (VGCC).
CC	-i- SUBCELLULAR LOCATION: Secreted.
CC	-i- TISSUE SPECIFICITY: Expressed by the venom duct.
CC	-i- MISCELLANEOUS: THE SEQUENCE SHOWN IS THAT OF CONOTOXIN GVIA.
CC	-i- SIMILARITY: BELONGS TO THE O-SUPERFAMILY OF CONOTOXINS. OMEGA-TYPE FAMILY.
DR	PIR: A43620; B43620.
DR	PIR: B43620; B43620.
KW	presynaptic neurotoxin; Neurotoxin; Toxin; Calcium channel inhibitor;
KW	Hydroxylation.
FT	MOD_RES 4 4 HYDROXYLATION.
FT	MOD_RES 7 7 HYDROXYLATION.
FT	DISULFID 1 16
FT	DISULFID 8 19
FT	DISULFID 15 26
FT	VARIANT 21 21 L->S (IN GVIIIB).
SQ	SEQUENCE 29 AA; 3290 MW; 573076958FB1E7 CRC64;
Qy	Query Match: 44.1%; Score: 67.5; DB: 1; Length: 29;
Qy	Best Local Similarity: 55.6%; Pred. No.: 0.028; Matches: 15; Conservative: 1; Mismatches: 8; Indels: 3; Gaps: 2; RN [1]
Db	1 CKRGKGCRRAYNCUCGSC--RSGKC 25
Db	1 CKSPGTPCSCRGMRDCC-T-SCLLYSNKC 26
RESULT 14	CX06_CONGE STANDARD; PRT; 26 AA.
ID	-CX06_CONTE STANDARD; PRT; 26 AA.
AC	P56714; 30-MAY-2000 (Rel. 39, Created)
DT	30-MAY-2000 (Rel. 39, Last sequence update)
DT	15-JUN-2002 (Rel. 41, Last annotation update)
DE	Omega-conotoxin in TxVII.
OS	Conus textile (cloth-of-gold cone).
OC	Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;
OC	Neogastropoda; Conoidea; Conidae; Conus.
NCBI_TaxID	6494; [1]
RN	SEQUENCE FROM N.A.
RX	Medline=93069266; Pubmed=1440648;
RX	College C.J., Hunspurger J.P., Imperial J.S., Hillyard D.R.;
RX	"Precursor structure of omega-conotoxin GVIA determined from a cDNA clone"; Toxicon 30:1111-1116(1992).
RN	[2]
RX	SEQUENCE OF 46-73.
RX	Medline=85072796; Pubmed=6509012;
RA	Olivera B.M., McIntosh J.M., Cruz L.J., Luque F.A., Gray W.R.;
RT	"Purification and sequence of a presynaptic peptide toxin from Conus geographus venom"; Biochemistry 23:5087-5090(1984).
RN	[3]
RX	STRUCTURE BY NMR OF GVIA.
RX	Medline=94047089; Pubmed=8230223;
RA	Pallaghy P.K., Dugan B.M., Pennington M.W., Norton R.S.;
RT	"Three-dimensional structure in solution of the calcium channel blocker omega-conotoxin"; RT; J. Mol. Biol. 234:405-420(1993).
RN	[4]
RX	STRUCTURE BY NMR OF GVIA.
RX	Medline=9332945; Pubmed=8338837;
RA	Davis J.H., Bradley E.K., Milianich G.P., Nadasdi L.,
RA	Ramachandran J., Basus V.J.;
RT	"Solution structure of omega-conotoxin GVIA using 2-D NMR spectroscopy and relaxation matrix analysis"; RT; Biochemistry 32:7396-7405(1993).
RN	[5]
RX	STRUCTURE BY NMR OF GVIA.
RA	Medline=99248506; Pubmed=10231724;
RA	Pallaghy P.K., Norton R.S.;
RT	"Refinement of solution structure of omega-conotoxin GVIA: implications for calcium channel binding"; RT; J. Pept. Res. 53:343-351(1999).
CC	-i- FUNCTION: Omega-conotoxins act at presynaptic membranes, they bind and block voltage-sensitive calcium channels (VGCC).
CC	-i- TISSUE SPECIFICITY: Expressed by the venom duct.
CC	-i- SIMILARITY: BELONGS TO THE O-SUPERFAMILY OF CONOTOXINS. OMEGA-TYPE FAMILY.
DR	IF3K; 13-DRC-00; presynaptic neurotoxin; Neurotoxin; Toxin; Calcium channel inhibitor;
KW	3D-structure.
FT	DISULFID 1 16
FT	DISULFID 8 20
FT	DISULFID 15 24
SQ	SEQUENCE 26 AA; 2840 MW; 3AFEE21698666294 CRC64;
RESULT 15	CX06_CONGE STANDARD; PRT; 73 AA.
ID	-CX06_CONTE STANDARD; PRT; 73 AA.
AC	P01522; 01-FEB-1994 (Rel. 28, Last sequence update)
DT	21-JUL-1986 (Rel. 01, Created)
DT	15-JUN-2002 (Rel. 41, Last annotation update)
DE	Omega-conotoxin (Shaker peptide) (SNX-124) [Contains: Omega conotoxin GVIB; Omega-conotoxin GVIC].
OS	Conus geographus (Geographic cone).
OC	Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda; Neogastropoda; Conoidea; Conidae; Conus.
OC	NCBI_TaxID=6491; [1]
RN	SEQUENCE FROM N.A.
RX	Medline=93069266; Pubmed=1440648;
RX	College C.J., Hunspurger J.P., Imperial J.S., Hillyard D.R.;
RX	"Precursor structure of omega-conotoxin GVIA determined from a cDNA clone"; Toxicon 30:1111-1116(1992).
RN	[2]
RX	SEQUENCE OF 46-73.
RX	Medline=85072796; Pubmed=6509012;
RA	Olivera B.M., McIntosh J.M., Cruz L.J., Luque F.A., Gray W.R.;
RT	"Purification and sequence of a presynaptic peptide toxin from Conus geographus venom"; Biochemistry 23:5087-5090(1984).
RN	[3]
RX	STRUCTURE BY NMR OF GVIA.
RX	Medline=94047089; Pubmed=8230223;
RA	Pallaghy P.K., Dugan B.M., Pennington M.W., Norton R.S.;
RT	"Three-dimensional structure in solution of the calcium channel blocker omega-conotoxin"; RT; J. Mol. Biol. 234:405-420(1993).
RN	[4]
RX	STRUCTURE BY NMR OF GVIA.
RX	Medline=9332945; Pubmed=8338837;
RA	Davis J.H., Bradley E.K., Milianich G.P., Nadasdi L.,
RA	Ramachandran J., Basus V.J.;
RT	"Solution structure of omega-conotoxin GVIA using 2-D NMR spectroscopy and relaxation matrix analysis"; RT; Biochemistry 32:7396-7405(1993).
RN	[5]
RX	STRUCTURE BY NMR OF GVIA.
RA	Medline=99248506; Pubmed=10231724;
RA	Pallaghy P.K., Norton R.S.;
RT	"Refinement of solution structure of omega-conotoxin GVIA: implications for calcium channel binding"; RT; J. Pept. Res. 53:343-351(1999).
CC	-i- FUNCTION: Omega-conotoxins act at presynaptic membranes, they bind and block voltage-sensitive calcium channels (VGCC).
CC	-i- SUBCELLULAR LOCATION: Secreted.
CC	-i- TISSUE SPECIFICITY: Expressed by the venom duct.
CC	-i- SIMILARITY: BELONGS TO THE O-SUPERFAMILY OF CONOTOXINS. OMEGA-TYPE FAMILY.
CC	This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (see <a href="http://www.isb-sib.ch/announce/">http://www.isb-sib.ch/announce/</a> or send an email to license@isb-sib.ch).



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## OM protein - protein search, using sw model

Run on: July 1, 2003, 10:42:27 ; Search time 13.2812 seconds

{without alignments} 387.853 Million cell updates/sec

Title: US-09-910-082a-375

Perfect score: 153

Sequence: 1 CKTGKPCSRAYNCCTGSCRSK 25

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 671580 seqs, 206047115 residues

Total number of hits satisfying chosen parameters: 671580

Minimum DB seq length: 0

Maximum DB seq length: 0

Post-processing: Minimum Match 0%  
Maximum Match 100%

Listing first 45 summaries

Database : SPREMBL\_21:\*

- 1: sp\_archaea:\*
- 2: sp\_bacteria:\*
- 3: sp\_fungi:\*
- 4: sp\_human:\*
- 5: sp\_invertebrate:\*
- 6: sp\_mammal:\*
- 7: sp\_mmc:\*
- 8: sp\_organelle:\*
- 9: sp\_phage:\*
- 10: sp\_plant:\*
- 11: sp\_rodent:\*
- 12: sp\_virus:\*
- 13: sp\_vertebrate:\*
- 14: sp\_unclassified:\*
- 15: sp\_rvirus:\*
- 16: sp\_bacteriapl:\*
- 17: sp\_archeap:\*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

## SUMMARIES

Result No.	Score	Query	% Match	Length	DB ID	Description
1	142	92.8	66	5	Q9NCV3	09ncv3 conus stria
2	142	92.8	66	5	Q9NCV2	09ncv2 conus stria
3	142	92.8	66	5	Q9NCV1	09ncv1 conus stria
4	134	87.6	66	5	Q9N6N6	09n6n6 conus stria
5	134	87.6	66	5	Q9NCV4	09ncv4 conus stria
6	134	87.6	66	5	Q9NCV0	09ncv0 conus stria
7	134	87.6	66	5	Q9NCU1	09ncu1 conus stria
8	112	73.2	66	5	Q9N633	09n633 conus catus
9	112	73.2	66	5	Q9N628	09n628 conus catus
10	112	73.2	66	5	Q9N625	09n625 conus catus
11	112	73.2	66	5	Q9NCW6	09ncw6 conus catus
12	112	73.2	66	5	Q9NCW5	09ncw5 conus catus
13	112	73.2	66	5	Q9NCW3	09ncw3 conus catus
14	112	73.2	66	5	Q9NCW2	09ncw2 conus catus
15	111	72.5	66	5	Q9NCW1	09ncw1 conus catus
16	110	71.9	66	5		

RESULT 1									
ID	Q9NCV3	PRELIMINARY;	PRT;	66 AA.	AC	Q9NCV3	Q9NCV3;	AC	Q9NCV3;
DT	01-OCT-2000 (TREMBLrel. 15, Created)				DT	01-OCT-2000 (TREMBLrel. 15, Last sequence update)			
DT	01-OCT-2000 (TREMBLrel. 15, Last annotation update)				DT	01-JUN-2002 (TREMBLrel. 21, Last annotation update)			
DE	Four-loop conotoxin (Frame).				DE	Conus striatus (Striated cone).			
OS	Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;				OS	Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;			
OC	Neogastropoda; Conoidea; Conidae; Conus.				OC	Neogastropoda; Conoidea; Conidae; Conus.			
OX	NCBI_TaxID=6493;				OX	NCBI_TaxID=6493;			
[1]					RN				
RP	SEQUENCE FROM N.A.				RP				
RC	STRAIN=CSIRH_1_3;				RC				
RA	Duda T.F., Palumbi S.R.;				RA				
RT	"Molecular evolution of four-loop conotoxin precursors from fish-eating Conus."				RT				
RL	Submitted (AUG-1999) to the EMBL/GenBank/DBJ databases.				RL				
EMBL; AF114242; AAFB9906; 1; -.					DR	HSSP; P0584; IMLI.			
DR	InterPro; IPR04214; Conotoxin.				DR	Pfam; PF02950; 1.			
FT	NON_TER; SEQUENCE	1	1	1	FT	NON_TER; 1	1	1	1
SQ.	66 AA:	7019 MW:	89B89B7AF1A7C7B3 CRC64;		SQ.	66 AA:	7019 MW:	89B89B7AF1A7C7B3 CRC64;	
Query Match	92.8%	Score 142;	DB 5;	Length 66;	Query Match	92.8%	Score 142;	DB 5;	Length 66;
Best Local Similarity	92.0%	Pred. No. 7.	2e-14	;	Best Local Similarity	92.0%	Pred. No. 7.	2e-14	;
Matches	23;	Conservative	0;	Mismatches	Matches	23;	Conservative	0;	Mismatches
OY	1 CKTGKPCSRAYNCCTGSCRSK 25				OY	1 CKTGKPCSRAYNCCTGSCRSK 25			
Db	41 CAAAGKPCSRAYNCCTGSCRSK 65				Db	41 CAAAGKPCSRAYNCCTGSCRSK 65			
RESULT 2									
ID	Q9NCV2	PRELIMINARY;	PRT;	66 AA.	ID	Q9NCV2	PRELIMINARY;	PRT;	66 AA.
AC	Q9NCV2;				AC	Q9NCV2;			

DT	01-OCT-2000 (TREMBLrel. 15, Created)	DE	Four-loop conotoxin precursor (Fragment).
DT	01-OCT-2000 (TREMBLrel. 21, Last sequence update)	OS	Conus striatus (Striated cone).
DE	Four-loop conotoxin (Fragment).	OC	Bukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;
OS	Conus striatus (Striated cone).	OC	Neogastropoda; Conoidea; Conidae; Conus.
OC	Eukaryota; Metazoa; Conoidea; Conidae; Conus.	NCBI_TAXID=6493;	[1]
OX	Neogastropoda; Conoidea; Conidae; Conus.	RN	SEQUENCE FROM N.A.
OX	NCBI_TAXID=6493;	RP	SEQUENCE FROM N.A.
RN	[1]	RC	SEQUENCE FROM N.A.
SP	SEQUENCE FROM N.A.	RT	SEQUENCE FROM N.A.
SPRAIN-CSTRH_1-4;		RT	SEQUENCE FROM N.A.
RA	Duda T.F., Palumbi S.R.;	RT	Molecular evolution of four-loop conotoxin precursors from fish-eating Conus.;
RT	"Molecular evolution of four-loop conotoxin precursors from fish-eating Conus.,"	RL	Submitted (AUG-1999) to the EMBL/GenBank/DDBJ databases.
RL	Submitted (AUG-1999) to the EMBL/GenBank/DDBJ databases.	DR	EMBL; AFI17424; AAF89908_1; -.
DR	EMBL; AFI17424; AAF89904_1; -.	DR	EMBL; AFI174240; AAF89904_1; -.
DR	HSSP; P05484; IMVI.	DR	HSSP; P05484; IMVI.
DR	InterPro; IPR004214; Conotoxin.	DR	InterPro; IPR004214; Conotoxin.
DR	InterPro; IPR004214; Conotoxin.	PFam	PF02950; Conotoxin_1.
DR	InterPro; IPR004214; Conotoxin.	FT	Non-TER 1 1
FT	NON-TER 1 1	SEQUENCE	66 AA; 7033 MW; 887E401681A7C7B3 CRC64;
FT	NON-TER 1 1	Query Match	92.8%; Score 142; DB 5; Length 66;
FT	NON-TER 1 1	Best Local Similarity	92.0%; Pred. No. 7.2e-14; Mismatches 23; Conservative 0; Mismatches 23; Indels 0; Gaps 0;
Qy	1 CKGCKPCSRAYNCCCTGSCRSGKC 25	Db	41 CKAAGKPCSRAYNCCCTGSCRSGKC 65
Db	41 CKAAGKPCSRAYNCCCTGSCRSGKC 65	RESULT 3	SEQUENCE FROM N.A.
Q9NCV1	PRELIMINARY;	PRT;	66 AA.
ID	Q9NCV1	AC	Q9NCV4; 66 AA.
AC	Q9NCV1;	DT	01-OCT-2000 (TREMBLrel. 15, Created)
DT	01-OCT-2000 (TREMBLrel. 15, Last sequence update)	DT	01-OCT-2000 (TREMBLrel. 15, Last sequence update)
DT	01-OCT-2000 (TREMBLrel. 21, Last annotation update)	DE	Four-loop conotoxin (Fragment).
DE	Four-loop conotoxin (Fragment).	OS	Conus striatus (Striated cone).
OS	Conus striatus (Striated cone).	OC	Bukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;
OC	Eukaryota; Metazoa; Conoidea; Conidae; Conus.	NCBI_TAXID=6493;	[1]
OX	Neogastropoda; Conoidea; Conidae; Conus.	RN	SEQUENCE FROM N.A.
OX	NCBI_TAXID=6493;	RP	SEQUENCE FROM N.A.
RN	[1]	RC	SEQUENCE FROM N.A.
SP	SEQUENCE FROM N.A.	RT	SEQUENCE FROM N.A.
SPRAIN-CSTRH_1-6;		RT	SEQUENCE FROM N.A.
RA	Duda T.F., Palumbi S.R.;	RT	Molecular evolution of four-loop conotoxin precursors from fish-eating Conus.;
RT	"Molecular evolution of four-loop conotoxin precursors from fish-eating Conus.,"	RL	Submitted (AUG-1999) to the EMBL/GenBank/DDBJ databases.
RT	Submitted (AUG-1999) to the EMBL/GenBank/DDBJ databases.	DR	EMBL; AFI174241; AAF89905_1; -.
RL	Submitted (AUG-1999) to the EMBL/GenBank/DDBJ databases.	DR	HSSP; P05484; IMVI.
DR	InterPro; IPR004214; Conotoxin.	DR	InterPro; IPR004214; Conotoxin.
DR	InterPro; IPR004214; Conotoxin.	PFam	PF02950; Conotoxin_1.
DR	InterPro; IPR004214; Conotoxin.	FT	Non-TER 1 1
FT	NON-TER 1 1	SEQUENCE	66 AA; 6976 MW; 29A992736137DA05 CRC64;
FT	NON-TER 1 1	Query Match	92.8%; Score 142; DB 5; Length 66;
FT	NON-TER 1 1	Best Local Similarity	92.0%; Pred. No. 7.2e-14; Mismatches 23; Conservative 0; Mismatches 23; Indels 0; Gaps 0;
Qy	1 CKGCKPCSRAYNCCCTGSCRSGKC 25	Db	41 CKAAGKPCSRAYNCCCTGSCRSGKC 65
Db	41 CKAAGKPCSRAYNCCCTGSCRSGKC 65	RESULT 4	SEQUENCE FROM N.A.
Q9N6N6	PRELIMINARY;	PRT;	66 AA.
ID	Q9N6N6	AC	Q9N6N6; 66 AA.
AC	Q9N6N6;	DT	01-OCT-2000 (TREMBLrel. 15, Created)
DT	01-OCT-2000 (TREMBLrel. 15, Last sequence update)	DT	01-OCT-2000 (TREMBLrel. 15, Last sequence update)
DT	01-OCT-2000 (TREMBLrel. 21, Last annotation update)	DE	Four-loop conotoxin (Fragment).
DT	01-OCT-2000 (TREMBLrel. 21, Last annotation update)	OS	Conus striatus (Striated cone).

OC Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;  
 OC Neogastropoda; Conoidea; Conidae; Conus.  
 NCBI\_TaxID=6493;  
 RN [1]  
 RP SEQUENCE FROM N.A.  
 RC STRAIN=CCATH\_1I\_6, CCATH\_1I\_1, AND CCATH\_1I\_2;  
 RA Duda T.F.; Palumbi S.R.;  
 RC STRAIN=CSRH\_1\_7;  
 RA Duda T.F., Palumbi S.R.;  
 RT "Molecular evolution of four-loop conotoxin precursors from fish-  
 eating Conus.";  
 RL Submitted (AUG-1999) to the EMBL/GenBank/DBJ databases.  
 DR EMBL; AF14246; AAF8910.1; -.  
 DR HSSP; P0584; IINV.  
 DR InterPro; IPR004214; Conotoxin.  
 DR Pfam; PF02950; Conotoxin; 1.  
 FT NON\_TER 1  
 SQ SEQUENCE 66 AA; 6981 MW; 20CDC33D7CA7DA05 CRC64;  
 Query Match 87.6%; Score 134; DB 5; Length 66;  
 Best Local Similarity 88.0%; Pred. No. 1.1e-12; Indels 0; Gaps 0;  
 Matches 22; Conservative 0; Mismatches 3; Indels 0; Gaps 0;  
 Qy 1 CKGTGKPCSRATYNCCTGSGK 25  
 Db 41 CKAAGKCSRKYNCCTGSGK 65

RESULT 7  
 O9NCU1 PRELIMINARY; PRT; 66 AA.  
 ID O9NCU1  
 AC O9NCU1  
 DT 01-OCT-2000 (TREMBLrel. 15, Created)  
 DT 01-OCT-2000 (TREMBLrel. 15, Last sequence update)  
 DT 01-JUN-2002 (TREMBLrel. 21, Last annotation update)  
 DE Four-loop conotoxin (Fragment).  
 OS Conus striatus (Striated cone).  
 OC Eukaryota; Metazoa; Gastropoda; Caenogastropoda;  
 OC Neogastropoda; Conoidea; Conidae; Conus.  
 OC NCBI\_TaxID=6493;  
 RN [1]  
 RP SEQUENCE FROM N.A.  
 RC STRAIN=CSRH\_R\_1;  
 RA Duda T.F., Palumbi S.R.;  
 RT "Molecular evolution of four-loop conotoxin precursors from fish-  
 eating Conus.";  
 RL Submitted (AUG-1999) to the EMBL/GenBank/DBJ databases.  
 DR EMBL; AF14267; AAF8931.1; -.  
 DR HSSP; P0584; IINV.  
 DR InterPro; IPR004214; Conotoxin.  
 DR Pfam; PF02950; Conotoxin; 1.  
 FT NON\_TER 1  
 SQ SEQUENCE 66 AA; 6951 MW; 0D986BC0A7A1A39F CRC64;

Query Match 87.6%; Score 134; DB 5; Length 66;  
 Best Local Similarity 88.0%; Pred. No. 1.1e-12; Indels 0; Gaps 0;  
 Matches 22; Conservative 0; Mismatches 3; Indels 0; Gaps 0;  
 Qy 1 CKGTGKPCSRATYNCCTGSGK 25  
 Db 41 CKAAGKCSRKYNCCTGSGK 65

RESULT 9  
 O9N628 PRELIMINARY; PRT; 66 AA.  
 ID O9N628  
 AC O9N628;  
 DT 01-OCT-2000 (TREMBLrel. 15, Created)  
 DT 01-JUN-2002 (TREMBLrel. 21, Last annotation update)  
 DE Four-loop conotoxin precursor (Fragment).  
 OS Conus catus.  
 OC Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;  
 OC Neogastropoda; Conoidea; Conidae; Conus.  
 OC NCBI\_TaxID=101291;  
 RN [1]  
 RP SEQUENCE FROM N.A.  
 RC STRAIN=CCATH\_1I\_9, AND CCATH\_1I\_6;  
 RA Duda T.F., Palumbi S.R.;  
 RT "Molecular evolution of four-loop conotoxin precursors from fish-  
 eating Conus.";  
 RL Submitted (AUG-1999) to the EMBL/GenBank/DBJ databases.  
 DR EMBL; AF14229; AAF89893.1; -.  
 DR HSSP; P0584; IINV.  
 DR InterPro; IPR004214; Conotoxin.  
 DR Pfam; PF02950; Conotoxin; 1.  
 FT NON\_TER 1  
 SQ SEQUENCE 66 AA; 7057 MW; E7AA5E3109688B7DA CRC64;

Query Match 73.2%; Score 112; DB 5; Length 66;  
 Best Local Similarity 68.0%; Pred. No. 2e-09; Indels 0; Gaps 0;  
 Matches 17; Conservative 3; Mismatches 5; Indels 0; Gaps 0;  
 Qy 1 CKGTGKPCSRATYNCCTGSGK 25  
 Db 41 CKSTGASCRRTSYDCCTGSGCRG 65

RESULT 10  
 O9N625 PRELIMINARY; PRT; 66 AA.  
 ID O9N625  
 AC O9N625;  
 DT 01-OCT-2000 (TREMBLrel. 15, Created)  
 DT 01-OCT-2000 (TREMBLrel. 15, Last sequence update)  
 DR 01-JUN-2002 (TREMBLrel. 21, Last annotation update)  
 DE Four-loop conotoxin precursor (Fragment).  
 OS Conus catus.  
 OC Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;  
 OC Neogastropoda; Conoidea; Conidae; Conus.  
 OC NCBI\_TaxID=101291;

RN [1]  
 RP SQUENCE FROM N.A.  
 STRAIN="VARIOUS STRAINS;  
 RA Duda T.F., Palumbi S.R.;  
 RT "Molecular evolution of four-loop conotoxin precursors from fish-eating Conus.";  
 RT Submitted (AUG-1999) to the EMBL/GenBank/DDBJ databases.  
 RL [1]  
 DR EMBL; AFI74228; AAF89882.1; -;  
 DR EMBL; AFI74221; AAF89885.1; -;  
 DR EMBL; AFI74222; AAF89886.1; -;  
 DR EMBL; AFI74224; AAF89888.1; -;  
 DR EMBL; AFI74225; AAF89889.1; -;  
 DR HSSP; P05484; IMVI.  
 DR InterPro; IPR04214; Conotoxin.  
 DR Pfam; PF02950; Conotoxin; 1.  
 FT NON\_TER 1  
 SEQUENCE 66 AA; 7056 MW; EA11338A6968B7DA CRC64;  
 Db 41 CKGKPCSKSIAINYCCTGSCRSRGC 65

RESULT 11  
 Q9NCW6 PRELIMINARY; PRT; 66 AA.  
 ID Q9NCW6  
 AC Q9NCW6;  
 DT 01-OCT-2000 (TREMBLrel. 15, created)  
 DT 01-OCT-2000 (TREMBLrel. 15, last sequence update)  
 DT 01-JUN-2002 (TREMBLrel. 21, last annotation update)  
 DE Four-loop conotoxin (Fragment).  
 OS Conus catus.  
 OC Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;  
 OC Neogastropoda; Conoidea; Conidae; Conus.  
 RN NCBI\_TaxID=101291;  
 RP SEQUENCE FROM N.A.  
 RC STRAIN=CCATH\_11\_3;  
 RA Duda T.F., Palumbi S.R.;  
 RT "Molecular evolution of four-loop conotoxin precursors from fish-eating Conus.";  
 RL Submitted (AUG-1999) to the EMBL/GenBank/DDBJ databases.  
 DR EMBL; AFI74216; AAF89880.1; -;  
 DR HSSP; P05484; IMVI.  
 DR InterPro; IPR04214; Conotoxin.  
 DR Pfam; PF02950; Conotoxin; 1.  
 FT NON\_TER 1  
 SEQUENCE 66 AA; 7023 MW; E445339B6968B0AC CRC64;  
 Db 41 CKGKPCSKSIAINYCCTGSCRSRGC 25

Query Match 73.2%; Score 112; DB 5; Length 66;  
 Best Local Similarity 68.0%; Pred. No. 2e-09; 5; Mismatches 17; Conservative 3; Mismatches 5; Indels 0; Gaps 0;

QY 1 CKGKPCSKSIAINYCCTGSCRSRGC 25  
 Q9NCW5 PRELIMINARY; PRT; 66 AA.  
 ID Q9NCW5  
 AC Q9NCW5;  
 DT 01-OCT-2000 (TREMBLrel. 15, Created)  
 DT 01-OCT-2000 (TREMBLrel. 15, Last sequence update)  
 DT 01-JUN-2002 (TREMBLrel. 21, Last annotation update)  
 DE Four-loop conotoxin (Fragment).  
 OS Conus catus.  
 OC Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;  
 OC Neogastropoda; Conoidea; Conidae; Conus.  
 OC Neogastropoda; Conoidea; Conidae; Conus.

RESULT 13  
 Q9NCW3 PRELIMINARY; PRT; 66 AA.  
 ID Q9NCW3  
 AC Q9NCW3;  
 DT 01-OCT-2000 (TREMBLrel. 15, created)  
 DT 01-OCT-2000 (TREMBLrel. 15, last sequence update)  
 DT 01-JUN-2002 (TREMBLrel. 21, last annotation update)  
 DE Four-loop conotoxin (Fragment).  
 OS Conus catus.  
 OC Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;  
 OC Neogastropoda; Conoidea; Conidae; Conus.  
 RN NCBI\_TaxID=101291;  
 RP SEQUENCE FROM N.A.  
 RC STRAIN=CCATH\_11\_7;  
 RA Duda T.F., Palumbi S.R.;  
 RT "Molecular evolution of four-loop conotoxin precursors from fish-eating Conus.";  
 RL Submitted (AUG-1999) to the EMBL/GenBank/DDBJ databases.  
 DR EMBL; AFI74220; AAF89884.1; -;  
 DR HSSP; P05484; IMVI.  
 DR InterPro; IPR04214; Conotoxin.  
 DR Pfam; PF02950; Conotoxin; 1.  
 FT NON\_TER 1  
 SEQUENCE 66 AA; 7056 MW; E445339B6968A1AC CRC64;  
 Db 41 CKGKPCSKSIAINYCCTGSCRSRGC 25

Query Match 73.2%; Score 112; DB 5; Length 66;  
 Best Local Similarity 68.0%; Pred. No. 2e-09; 5; Mismatches 17; Conservative 3; Mismatches 5; Indels 0; Gaps 0;

QY 1 CKGKPCSKSIAINYCCTGSCRSRGC 25  
 Q9NCW2 PRELIMINARY; PRT; 66 AA.  
 ID Q9NCW2  
 AC Q9NCW2;  
 DT 01-OCT-2000 (TREMBLrel. 15, created)  
 DT 01-OCT-2000 (TREMBLrel. 15, last sequence update)  
 DT 01-JUN-2002 (TREMBLrel. 21, last annotation update)  
 DE Four-loop conotoxin (Fragment).  
 OS Conus catus.  
 OC Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;  
 OC Neogastropoda; Conoidea; Conidae; Conus.  
 RN NCBI\_TaxID=101291;  
 RP SEQUENCE FROM N.A.

RC STRAIN=CCATH\_11\_3;  
 RA Duda T.F.; Palumbi S.R.;  
 RT "Molecular evolution of four-loop conotoxin precursors from fish-  
 eating Conus.;"  
 RL Submitted (AUG-1999) to the EMBL/GenBank/DBJ databases.  
 DR EMBL: AFI4223; AAF9882.1; -.  
 DR HSSP: P0584; INV.  
 DR InterPro: IPR004214; Conotoxin; 1.  
 DR Pfam: PF02950; Conotoxin; 1.  
 FT NON\_TER 1  
 SEQUENCE 66 AA; 7026 MW; EA11339E3B2DB7DA CRC64;  
 SQ Query Match 73.2%; Score 112; DB 5; Length 66;  
 Best Local Similarity 68.0%; Pred. No. 2e-09;  
 Matches 17; Conservative 3; Mismatches 5; Indels 0; Gaps 0;  
 QY 1 CKGTGKPCSRAYNCCTGSCSGKC 25  
 Db 41 CKSTGASCRRTSYDCCCTGSCSGRC 65

RESULT 15

Q9NCW4 PRELIMINARY; PRT; 66 AA.  
 ID Q9NCW4  
 AC Q9NCW4;  
 DT 01-OCT-2000 (T-EMBLrel. 15, Created)  
 DT 01-OCT-2000 (T-EMBLrel. 15, Last sequence update)  
 DT 01-JUN-2002 (T-EMBLrel. 21, Last annotation update)  
 DE Four-loop conotoxin (Fragment).  
 OS Conus catus.  
 OC Eukaryota; Metazoa; Mollusca; Gastropoda; Caenogastropoda;  
 OC Neogastropoda; Conoidea; Conidae; Conus.  
 RN [1]  
 RP SEQUENCE FROM N.A.  
 RC STRAIN=CCATH\_11\_5;  
 RA Duda T.F.; Palumbi S.R.;  
 RT "Molecular evolution of four-loop conotoxin precursors from fish-  
 eating Conus.;"  
 RL Submitted (AUG-1999) to the EMBL/GenBank/DBJ databases.  
 DR EMBL: AFI4218; AAF9882.1; -.  
 DR HSSP: P0584; INV.  
 DR InterPro: IPR004214; Conotoxin.  
 DR Pfam: PF02950; Conotoxin; 1.  
 FT NON\_TER 1  
 SEQUENCE 66 AA; 6995 MW; E445338A6A7A1AC CRC64;  
 SQ Query Match 72.5%; Score 111; DB 5; Length 66;  
 Best Local Similarity 68.0%; Pred. No. 2.8e-09; Length 66;  
 Matches 17; Conservative 2; Mismatches 6; Indels 0; Gaps 0;  
 QY 1 CKGTGKPCSRAYNCCTGSCSGKC 25  
 Db 41 CKSTGASCRRTSYDCCCTGSCSGRC 65

Search completed: July 1, 2003, 0:52:17  
 Job time : 14.2812 secs

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protein - protein search, using sw model

run on: July 1, 2003, 10:52:57 ; search time 8.85417 seconds  
(without alignments)  
(309.591 Million cell updates/sec)

title: US-09-910-082A-375  
perfect score: 153  
sequence: CKGTGPKCSRAYNCCCTGSCRSKGK 25

scoring table: BLOSUM62  
Gapop 10.0 , Gapext 0.5

searched: 42469 seqs, 109646833 residues  
total number of hits satisfying chosen parameters: 424699  
minimum DB seq length: 0  
maximum DB seq length: 200000000

post-processing: Minimum Match 0%  
Maximum Match 100%  
Listing first 45 summaries

database : Published\_Applications\_AA:\*

1: /cggn2\_6/ptodata/1/pubpaas/US09\_NEW\_PUB\_pep:\*

2: /cggn2\_6/ptodata/1/pubpaas/PCT\_NEW\_PUB\_pep:\*

3: /cggn2\_6/ptodata/1/pubpaas/US06\_NEW\_PUB\_pep:\*

4: /cggn2\_6/ptodata/1/pubpaas/US05\_PUBCOMB\_pep:\*

5: /cggn2\_6/ptodata/1/pubpaas/US04\_PUB\_pep:\*

6: /cggn2\_6/ptodata/1/pubpaas/US07\_PUBCOMB\_pep:\*

7: /cggn2\_6/ptodata/1/pubpaas/PCTUS\_PUBCOMB\_pep:\*

8: /cggn2\_6/ptodata/1/pubpaas/US08\_PUBCOMB\_pep:\*

9: /cggn2\_6/ptodata/1/pubpaas/US09\_NEW\_PUB\_pep:\*

10: /cggn2\_6/ptodata/1/pubpaas/US09\_PUBCOMB\_pep:\*

11: /cggn2\_6/ptodata/1/pubpaas/US10\_NEW\_PUB\_pep:\*

12: /cggn2\_6/ptodata/1/pubpaas/US10\_PUBCOMB\_pep:\*

13: /cggn2\_6/ptodata/1/pubpaas/US60\_NEW\_PUB\_pep:\*

14: /cggn2\_6/ptodata/1/pubpaas/US60\_PUBCOMB\_pep:\*

pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

RESULTS

result No.	Score	Query Match	Length	DB ID	Description
1	70	45.8	1840	9	US-10-123-155-131 Sequence 131, App
2	69	45.1	1058	9	US-10-123-155-231 Sequence 231, App
3	68	44.4	2380	9	US-10-184-644-597 Sequence 597, App
4	68	44.4	2380	9	US-10-184-634-597 Sequence 597, App
5	67	43.8	708	9	US-10-184-644-211 Sequence 211, App
6	67	43.8	708	9	US-10-184-644-211 Sequence 211, App
7	67	43.8	1413	9	US-10-184-644-33 Sequence 33, App
8	67	43.8	1413	9	US-10-184-644-33 Sequence 33, App
9	66.5	43.5	2886	9	US-10-184-644-7 Sequence 7, App
10	66.5	43.5	2886	9	US-10-184-634-7 Sequence 7, App
11	66	43.1	1328	9	US-10-123-155-157 Sequence 157, App
12	66	43.1	2276	9	US-10-123-155-9 Sequence 9, App
13	66	43.1	2692	9	US-10-184-644-225 Sequence 225, App
14	66	43.1	2692	9	US-10-184-634-225 Sequence 211, App
15	66	43.1	3266	9	US-10-123-155-211 Sequence 67, App
16	66	43.1	4185	9	US-10-123-155-67 Sequence 67, App
17	65	42.5	1570	9	US-10-184-644-335 Sequence 335, App
18	65	42.5	1570	9	US-10-184-634-335 Sequence 335, App
19	65	42.5	3690	9	US-10-184-644-517 Sequence 517, App

SUMMARIES

result No.	Score	Query Match	Length	DB ID	Description
1	100	100	100	1	RESULT 1 US-10-123-155-131 Sequence 131, Application US/10123115 ; Publication No. US20030068794A1 ; GENERAL INFORMATION: ; APPLICANT: Baker, Kevin P. ; APPLICANT: Bereznini, Maureen ; APPLICANT: Deforge, Laura ; APPLICANT: Desnoyers, Luc ; APPLICANT: Flivarooff, Ellen ; APPLICANT: Gao, Wei-Qiang ; APPLICANT: Gerritsen, Mary E. ; APPLICANT: Godowski, Paul J. ; APPLICANT: Gurney, Austin L. ; APPLICANT: Shrawan, Steven ; APPLICANT: Smith, Victoria ; APPLICANT: Stewart, Timothy A. ; APPLICANT: Tumas, Daniel ; APPLICANT: Watarabe, Colin K ; APPLICANT: Wood, William ; APPLICANT: Zhang, Zemin
2	99.8	99.8	99.8	1	TITLE OF INVENTION: SECRETED AND TRANSMEMBRANE FILE REFERENCE: P3330R1C30 CURRENT APPLICATION NUMBER: US/10/123,155 CURRENT FILING DATE: 2002-04-15 PRIOR APPLICATION REMOVED - See Palm or File WRI NUMBER OF SEQ ID NOS: 550 SEQ ID NO: 6431 LENGTH: 1840 TYPE: DNA ORGANISM: Homo Sapien
3	99.8	99.8	99.8	1	US-10-123-155-131 Query Match 45.8%; score 70; DB 9; Best Local Similarity 44.0%; Pred. No. 7.1; Matches 11; Conservative 1; Mismatches 1
4	99.8	99.8	99.8	1	CKGTGPKCSRAYNCCCTGSCRSKGK 25
5	99.8	99.8	99.8	1	CGGTGPGGGACAGGCGAC 265

ALIGNMENTS

## ALIGNMENTS

RESULT 2  
US-10-123-155-231  
; Sequence 231, Application US/10123155  
; GENERAL INFORMATION:  
; APPLICANT: Baker, Kevin P.  
; APPLICANT: Beresini, Maureen  
; APPLICANT: DeForge, Laura  
; APPLICANT: Desnoyers, Luc  
; APPLICANT: Filvaroff, Ellen  
; APPLICANT: Gao, Wei-Qiang  
; APPLICANT: Gerritsen, Mary E.  
; APPLICANT: Goddard, Audrey  
; APPLICANT: Godowski, Paul J.  
; APPLICANT: Gurney, Austin L.  
; APPLICANT: Sherwood, Steven  
; APPLICANT: Smith, Victoria  
; APPLICANT: Stewart, Timothy A.  
; APPLICANT: Tumas, Daniel  
; APPLICANT: Watanaabe, Colin K.  
; APPLICANT: Wood, William  
; APPLICANT: Zhang, Zemin  
TITLE OF INVENTION: SECRETED AND TRANSMEMBRANE POLYPEPTIDES AND NUCLEIC ACIDS ENCODING THE SAME  
FILE REFERENCE: P3330R1C30  
CURRENT APPLICATION NUMBER: US/10/123,155  
CURRENT FILING DATE: 2002-04-15  
PRIORITY APPLICATION removed - See Palm or File Wrapper  
NUMBER OF SEQ ID NOS: 550  
SEQ ID NO: 231  
LENGTH: 1058  
TYPE: DNA  
ORGANISM: Homo Sapien  
US-10-123-155-231

Query Match 45.1%; Score 69; DB 9; Length 1058;  
Best Local Similarity 48.0%; Pred. No. 5.8; 12; Indels 0; Gaps 0;  
Matches 12; Conservative 1; Mismatches 0;

Qy 1 CKGTGKPCSRRIAYNCCTGSGRSK 25  
Db 238 CGGGGCAGCACGCCCTGGAC 262

RESULT 3  
US-10-184-644-597  
; Sequence 597, Application US/10184644  
; Publication No. US20030044930A1  
; GENERAL INFORMATION:  
; APPLICANT: Baker, Kevin P.  
; APPLICANT: Chen, Jian  
; APPLICANT: Desnoyers, Luc  
; APPLICANT: Goddard, Audrey  
; APPLICANT: Godowski, Paul J.  
; APPLICANT: Gurney, Austin L.  
; APPLICANT: Pan, James  
; APPLICANT: Smith, Victoria  
; APPLICANT: Watanaabe, Colin K.  
; APPLICANT: Wood, William I.  
TITLE OF INVENTION: SECRETED AND TRANSMEMBRANE POLYPEPTIDES AND NUCLEIC ACIDS ENCODING THE SAME  
FILE REFERENCE: P3330R1C30  
CURRENT APPLICATION NUMBER: US/10/123,155  
CURRENT FILING DATE: 2002-04-15  
PRIORITY APPLICATION removed - See Palm or File Wrapper  
NUMBER OF SEQ ID NOS: 550  
SEQ ID NO: 597  
LENGTH: 2380  
TYPE: DNA  
ORGANISM: Homo Sapien  
US-10-184-644-597

Query Match 45.1%; Score 69; DB 9; Length 1058;  
Best Local Similarity 48.0%; Pred. No. 5.8; 12; Indels 0; Gaps 0;  
Matches 12; Conservative 1; Mismatches 0;

Qy 1 CKGTGKPCSRRIAYNCCTGSGRSK 25  
Db 238 CGGGGCAGCACGCCCTGGAC 262

RESULT 4  
US-10-184-634-597  
; Sequence 597, Application US/10184634  
; Publication No. US20030088684A1  
; GENERAL INFORMATION:  
; APPLICANT: Baker, Kevin P.  
; APPLICANT: Chen, Jian  
; APPLICANT: Desnoyers, Luc  
; APPLICANT: Goddard, Audrey  
; APPLICANT: Godowski, Paul J.  
; APPLICANT: Gurney, Austin L.  
; APPLICANT: Pan, James  
; APPLICANT: Smith, Victoria  
; APPLICANT: Watanaabe, Colin K.  
; APPLICANT: Wood, William I.  
TITLE OF INVENTION: SECRETED AND TRANSMEMBRANE POLYPEPTIDES AND NUCLEIC ACIDS ENCODING THE SAME  
FILE REFERENCE: P3330R1C30  
CURRENT APPLICATION NUMBER: US/10/123,155  
CURRENT FILING DATE: 2002-04-15  
PRIORITY APPLICATION removed - See Palm or File Wrapper  
NUMBER OF SEQ ID NOS: 550  
SEQ ID NO: 597  
LENGTH: 2380  
TYPE: DNA  
ORGANISM: Homo Sapien  
US-10-184-634-597

Query Match 44.4%; Score 68; DB 9; Length 2380;  
Best Local Similarity 48.0%; Pred. No. 14; 12; Indels 0; Gaps 0;  
Matches 12; Conservative 1; Mismatches 0;

Qy 1 CKGTGKPCSRRIAYNCCTGSGRSK 25  
Db 932 CGGTGGCACAAAAACCTGACTGGAC 956

RESULT 5  
US-10-184-644-211  
; Sequence 211, Application US/10184644  
; Publication No. US20030044930A1  
; GENERAL INFORMATION:  
; APPLICANT: Baker, Kevin P.  
; APPLICANT: Chen, Jian  
; APPLICANT: Desnoyers, Luc  
; APPLICANT: Goddard, Audrey  
; APPLICANT: Godowski, Paul J.  
; APPLICANT: Gurney, Austin L.  
; APPLICANT: Pan, James  
; APPLICANT: Smith, Victoria  
; APPLICANT: Watanaabe, Colin K.  
; APPLICANT: Wood, William I.  
TITLE OF INVENTION: SECRETED AND TRANSMEMBRANE POLYPEPTIDES AND NUCLEIC ACIDS ENCODING THE SAME  
FILE REFERENCE: P3430R1C227  
CURRENT APPLICATION NUMBER: US/10/184,644  
CURRENT FILING DATE: 2002-05-28  
PRIORITY APPLICATION removed - See File Wrapper or Palm  
NUMBER OF SEQ ID NOS: 612  
SEQ ID NO: 597  
LENGTH: 2380  
TYPE: DNA  
ORGANISM: Homo Sapien

LENGTH: 708  
 TYPE: DNA  
 ORGANISM: Homo Sapien  
 US-10-184-644-211

Query Match 43.8%; Score 67; DB 9; Length 708;  
 Best Local Similarity 44.0%; Pred. No. 6.9; Mismatches 11; Conservative 1; Indels 13; Gaps 0; Gaps 0; Matches 11; Mismatches 13; Indels 0; Gaps 0;

QY 1 CKGTGKPCSRAYNCTGSCRSK 25  
 DB 338 CTCTGACCGCTCTCTGGATGAC 362

RESULT 6  
 US-10-184-634-211  
 Sequence 211, Application US/10184634  
 Publication No. US20030068684A1  
 GENERAL INFORMATION:  
 APPLICANT: Baker, Kevin P.  
 APPLICANT: Chen, Jian  
 APPLICANT: Desnoyers, Luc  
 APPLICANT: Goddard, Audrey  
 APPLICANT: Godowski, Paul J.  
 APPLICANT: Gurney, Austin L.  
 APPLICANT: Pan, James  
 APPLICANT: Smith, Victoria  
 APPLICANT: Watanabe, Colin K.  
 APPLICANT: Wood, William T.  
 APPLICANT: Zhang, Zemin  
 TITLE OF INVENTION: SECRETED AND TRANSMEMBRANE POLYPEPTIDES AND NUCLEIC ACIDS ENCODING THE SAME  
 FILE REFERENCE: P3430RIC217  
 CURRENT APPLICATION NUMBER: US/10/184, 634  
 CURRENT FILING DATE: 2002-06-28  
 Prior Application removed - See File Wrapper or Palm  
 NUMBER OF SEQ ID NOS: 612  
 SEQ ID NO 211  
 LENGTH: 708  
 TYPE: DNA  
 ORGANISM: Homo Sapien  
 US-10-184-634-211

Query Match 43.8%; Score 67; DB 9; Length 708;  
 Best Local Similarity 44.0%; Pred. No. 6.9; Mismatches 11; Conservative 1; Indels 13; Gaps 0; Gaps 0; Matches 11; Mismatches 13; Indels 0; Gaps 0; Gaps 0; Matches 11; Mismatches 13; Indels 0; Gaps 0;

QY 1 CKGTGKPCSRAYNCTGSCRSK 25  
 DB 338 CTCTGACCGCTCTCTGGATGAC 362

RESULT 7  
 US-10-184-644-33  
 Sequence 33, Application US/10184644  
 Publication No. US20030044930A1  
 GENERAL INFORMATION:  
 APPLICANT: Baker, Kevin P.  
 APPLICANT: Chen, Jian  
 APPLICANT: Desnoyers, Luc  
 APPLICANT: Goddard, Audrey  
 APPLICANT: Godowski, Paul J.  
 APPLICANT: Gurney, Austin L.  
 APPLICANT: Pan, James  
 APPLICANT: Smith, Victoria  
 APPLICANT: Watanabe, Colin K.  
 APPLICANT: Wood, William T.  
 APPLICANT: Zhang, Zemin  
 TITLE OF INVENTION: SECRETED AND TRANSMEMBRANE POLYPEPTIDES AND NUCLEIC ACIDS ENCODING THE SAME  
 FILE REFERENCE: P3430RIC217  
 CURRENT APPLICATION NUMBER: US/10/184, 634  
 CURRENT FILING DATE: 2002-06-28  
 Prior Application removed - See File Wrapper or Palm  
 NUMBER OF SEQ ID NOS: 612  
 SEQ ID NO 33  
 LENGTH: 1413  
 TYPE: DNA  
 ORGANISM: Homo Sapien  
 US-10-184-634-33

Query Match 43.8%; Score 67; DB 9; Length 1413;  
 Best Local Similarity 44.0%; Pred. No. 12; Mismatches 11; Conservative 1; Indels 13; Gaps 0; Gaps 0; Matches 11; Conservative 1; Indels 13; Gaps 0; Gaps 0; Matches 11; Conservative 1; Indels 13; Gaps 0; Gaps 0; Matches 11; Conservative 1; Indels 13; Gaps 0; Gaps 0;

QY 1 CKGTGKPCSRAYNCTGSCRSK 25  
 DB 518 CTATGCCAGCCAGGCCACAGAC 542

RESULT 8  
 US-10-184-634-33  
 Sequence 33, Application US/10184634  
 Publication No. US20030068684A1  
 GENERAL INFORMATION:  
 APPLICANT: Baker, Kevin P.  
 APPLICANT: Chen, Jian  
 APPLICANT: Desnoyers, Luc  
 APPLICANT: Goddard, Audrey  
 APPLICANT: Godowski, Paul J.  
 APPLICANT: Gurney, Austin L.  
 APPLICANT: Pan, James  
 APPLICANT: Smith, Victoria  
 APPLICANT: Watanabe, Colin K.  
 APPLICANT: Wood, William T.  
 APPLICANT: Zhang, Zemin  
 TITLE OF INVENTION: SECRETED AND TRANSMEMBRANE POLYPEPTIDES AND NUCLEIC ACIDS ENCODING THE SAME  
 FILE REFERENCE: P3430RIC217  
 CURRENT APPLICATION NUMBER: US/10/184, 634  
 CURRENT FILING DATE: 2002-06-28  
 Prior Application removed - See File Wrapper or Palm  
 NUMBER OF SEQ ID NOS: 612  
 SEQ ID NO 33  
 LENGTH: 1413  
 TYPE: DNA  
 ORGANISM: Homo Sapien  
 US-10-184-634-33

Query Match 43.8%; Score 67; DB 9; Length 1413;  
 Best Local Similarity 44.0%; Pred. No. 12; Mismatches 11; Conservative 1; Indels 13; Gaps 0; Gaps 0; Matches 11; Conservative 1; Indels 13; Gaps 0; Gaps 0; Matches 11; Conservative 1; Indels 13; Gaps 0; Gaps 0; Matches 11; Conservative 1; Indels 13; Gaps 0; Gaps 0;

QY 1 CKGTGKPCSRAYNCTGSCRSK 25  
 DB 518 CTATGCCAGCCAGGCCACAGAC 542

RESULT 9  
 US-10-184-644-7  
 Sequence 7, Application US/10184644  
 Publication No. US20030044930A1  
 GENERAL INFORMATION:  
 APPLICANT: Baker, Kevin P.  
 APPLICANT: Chen, Jian  
 APPLICANT: Desnoyers, Luc  
 APPLICANT: Goddard, Audrey  
 APPLICANT: Godowski, Paul J.  
 APPLICANT: Gurney, Austin L.  
 APPLICANT: Pan, James  
 APPLICANT: Smith, Victoria  
 APPLICANT: Watanabe, Colin K.  
 APPLICANT: Wood, William T.  
 APPLICANT: Zhang, Zemin  
 TITLE OF INVENTION: SECRETED AND TRANSMEMBRANE POLYPEPTIDES AND NUCLEIC ACIDS ENCODING THE SAME  
 FILE REFERENCE: P3430RIC227  
 CURRENT APPLICATION NUMBER: US/10/184, 644  
 CURRENT FILING DATE: 2002-06-28

Prior Application removed - See File Wrapper or Palm  
 NUMBER OF SEQ ID NOS: 612  
 SEQ ID NO 33  
 LENGTH: 1413  
 TYPE: DNA  
 ORGANISM: Homo Sapien  
 US-10-184-644-33

Query Match 43.8%; Score 67; DB 9; Length 1413;  
 Best Local Similarity 44.0%; Pred. No. 12; Mismatches 11; Conservative 1; Indels 13; Gaps 0; Gaps 0; Matches 11; Conservative 1; Indels 13; Gaps 0; Gaps 0; Matches 11; Conservative 1; Indels 13; Gaps 0; Gaps 0;

QY 1 CKGTGKPCSRAYNCTGSCRSK 25  
 DB 518 CTATGCCAGCCAGGCCACAGAC 542

FILE REFERENCE: P3430RIC227  
; CURRENT APPLICATION NUMBER: US/10/184,644  
; CURRENT FILING DATE: 2002-06-28  
; PRIORITY APPLICATION removed - See File Wrapper or Palm  
; NUMBER OF SEQ ID NOS: 612  
; SEQ ID NO 7  
; LENGTH: 2886  
; TYPE: DNA  
; ORGANISM: Homo Sapien  
; US-10-184-644-7

Query Match 43.5%; Score 66.5; DB 9; Length 2886;  
; Best Local Similarity 37.5%; Pred. No. 24; Mismatches 12; Conservative 3; Mismatches 10; Indels 7; Gaps 1;  
; Qy 1 CKGTMGKPCSRAYNCCCTGSC-----RSGKC 25  
; Db 640 CAGGGCTTCCCTGACTTATTTGTC 671

RESULT 10  
US-10-184-634-7 Application US/10184634  
; Sequence 7, Application US/10184634  
; Publication No. US200300686841  
; GENERAL INFORMATION:  
; APPLICANT: Baker, Kevin P.  
; APPLICANT: Chen, Jian  
; APPLICANT: Desnoyers, Luc  
; APPLICANT: Goddard, Audrey  
; APPLICANT: Gurney, Austin L.  
; APPLICANT: Pan, James  
; APPLICANT: Smith, Victoria  
; APPLICANT: Watanabe, Colin K.  
; APPLICANT: Wood, William I.  
; APPLICANT: Zhang, Zemin  
; TITLE OF INVENTION: SECRETED AND TRANSMEMBRANE POLYPEPTIDES AND NUCLEIC ACIDS ENCODING THE SAME  
; FILE REFERENCE: P3430RIC217  
; CURRENT APPLICATION NUMBER: US/10/184,634  
; CURRENT FILING DATE: 2002-06-28  
; PRIORITY APPLICATION removed - See File Wrapper or Palm  
; NUMBER OF SEQ ID NOS: 612  
; SEQ ID NO 7  
; LENGTH: 2886  
; TYPE: DNA  
; ORGANISM: Homo Sapien  
; US-10-184-634-7

Query Match 43.1%; Score 66; DB 9; Length 1328;  
; Best Local Similarity 52.0%; Pred. No. 15; Mismatches 13; Conservative 0; Mismatches 10; Indels 2; Gaps 1;  
; Qy 1 CKGTGKPCSRAYNCCCTGSCSGKC 25  
; Db 520 CAGTGAGCCCCAACCCGGC-GAC 542

RESULT 12  
US-10-123-155-9  
; Sequence 9, Application US/10123155  
; Publication No. US20030068794A1  
; GENERAL INFORMATION:  
; APPLICANT: Baker, Kevin P.  
; APPLICANT: Beresini, Maureen  
; APPLICANT: Deffore, Laura  
; APPLICANT: Desnoyers, Luc  
; APPLICANT: Filatoff, Ellen  
; APPLICANT: Gao, Wei-Qiang  
; APPLICANT: Gerritsen, Mary E.  
; APPLICANT: Goddard, Audrey  
; APPLICANT: Gurney, Austin L.  
; APPLICANT: Sherwood, Steven  
; APPLICANT: Smith, Victoria  
; APPLICANT: Stewart, Timothy A.  
; APPLICANT: Tumas, Daniel  
; APPLICANT: Watanabe, Colin K.  
; APPLICANT: Wood, William I.  
; APPLICANT: Zhang, Zemin  
; TITLE OF INVENTION: SECRETED AND TRANSMEMBRANE POLYPEPTIDES AND NUCLEIC ACIDS ENCODING THE SAME  
; FILE REFERENCE: P3330RIC10  
; CURRENT APPLICATION NUMBER: US/10/123,155  
; CURRENT FILING DATE: 2002-04-15  
; PRIORITY APPLICATION removed - See Palm or File Wrapper  
; NUMBER OF SEQ ID NOS: 550  
; SEQ ID NO 9  
; LENGTH: 2276  
; TYPE: DNA  
; ORGANISM: Homo Sapien  
; US-10-123-155-9

Query Match 43.1%; Score 66; DB 9; Length 2276;  
; Best Local Similarity 44.0%; Pred. No. 22; Mismatches 11; Conservative 2; Mismatches 12; Indels 0; Gaps 0;  
; Qy 1 CKGTGKPCSRAYNCCCTGSCRSK 25  
; Db 816 CAGAGGCCATCAAGCTGGCAAGGC 840

RESULT 13

US-10-184-644-225

Sequence 225, Application US/10184644

Publication No. US20030044930A1

GENERAL INFORMATION:

APPLICANT: Baker, Kevin P.

APPLICANT: Chen, Jian

APPLICANT: Desnoyers, Luc

APPLICANT: Godowski, Paul J.

APPLICANT: Gurney, Austin L.

APPLICANT: Pan, James

APPLICANT: Smith, Victoria

APPLICANT: Watanabe, Colin K.

APPLICANT: Zhang, Zemin

APPLICANT: Wood, William I.

TITLE OF INVENTION: SECRETED AND TRANSMEMBRANE POLYPEPTIDES AND NUCLEIC

FILE REFERENCE: P3430RIC227

CURRENT APPLICATION NUMBER: US/10/184,644

CURRENT FILING DATE: 2002-06-28

Prior Application removed - See File Wrapper or Palm

NUMBER OF SEQ ID NOS: 612

SEQ ID NO 225

LENGTH: 2692

TYPE: DNA

ORGANISM: Homo Sapien

US-10-184-644-225

Query Match

RESULT 14

US-10-184-634-225

Sequence 225, Application US/10184634

Publication No. US20030068684A1

GENERAL INFORMATION:

APPLICANT: Baker, Kevin P.

APPLICANT: Chen, Jian

APPLICANT: Desnoyers, Luc

APPLICANT: Goddard, Audrey

APPLICANT: Gurney, Austin L.

APPLICANT: Pan, James

APPLICANT: Smith, Victoria

APPLICANT: Watanabe, Colin K.

APPLICANT: Zhang, Zemin

TITLE OF INVENTION: SECRETED AND TRANSMEMBRANE POLYPEPTIDES AND NUCLEIC

FILE REFERENCE: P3430RIC217

CURRENT APPLICATION NUMBER: US/10/184,634

CURRENT FILING DATE: 2002-06-28

Prior Application removed - See File Wrapper or Palm

NUMBER OF SEQ ID NOS: 612

SEQ ID NO 225

LENGTH: 2692

TYPE: DNA

ORGANISM: Homo Sapien

US-10-184-634-225

Db 2024 CTCGTGCGATGTCCTCTCG 2046

RESULT 15

US-10-123-155-211

Sequence 211, Application US/10123155

Publication No. US20030068794A1

GENERAL INFORMATION:

APPLICANT: Baker, Kevin P.

APPLICANT: Beresini, Maureen

APPLICANT: Desnoyers, Luc

APPLICANT: Filvaroff, Ellen

APPLICANT: Gao, Wei-Qiang

APPLICANT: Gerritsen, Mary E.

APPLICANT: Godowski, Paul J.

APPLICANT: Gurney, Austin L.

APPLICANT: Sherwood, Steven

APPLICANT: Smith, Victoria

APPLICANT: Stewart, Timothy A.

APPLICANT: Tumas, Daniel

APPLICANT: Watanabe, Colin K.

APPLICANT: Wood, William I.

TITLE OF INVENTION: SECRETED AND TRANSMEMBRANE POLYPEPTIDES AND NUCLEIC

FILE REFERENCE: P3330RIC30

CURRENT APPLICATION NUMBER: US/10/123,155

CURRENT FILING DATE: 2002-04-15

Prior Application removed - See Palm or File Wrapper

NUMBER OF SEQ ID NOS: 550

SEQ ID NO 211

LENGTH: 3266

TYPE: DNA

ORGANISM: Homo Sapien

US-10-123-155-211

Query Match

RESULT 16

US-10-123-155-211

Sequence 211, Application US/10123155

Publication No. US20030068794A1

GENERAL INFORMATION:

APPLICANT: Baker, Kevin P.

APPLICANT: Chen, Jian

APPLICANT: Desnoyers, Luc

APPLICANT: Goddard, Audrey

APPLICANT: Gurney, Austin L.

APPLICANT: Pan, James

APPLICANT: Smith, Victoria

APPLICANT: Watanabe, Colin K.

APPLICANT: Zhang, Zemin

TITLE OF INVENTION: SECRETED AND TRANSMEMBRANE POLYPEPTIDES AND NUCLEIC

FILE REFERENCE: P3430RIC217

CURRENT APPLICATION NUMBER: US/10/184,634

CURRENT FILING DATE: 2002-06-28

Prior Application removed - See File Wrapper or Palm

NUMBER OF SEQ ID NOS: 612

SEQ ID NO 225

LENGTH: 2692

TYPE: DNA

ORGANISM: Homo Sapien

US-10-184-634-225

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GenCore version 5.1.6  
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On protein - protein search, using sw model

Run on: July 1, 2003, 10:49:37 ; Search time 6.25 Seconds  
 (without alignments)

117.692 Million cell updates/sec

Title: US-09-910-082a-375

Perfect score: 153

Sequence: 1 CKGTGKPCSRAYNCCNGSCRSKGKC 25

scoring table: BLOSUM62

Gapov 10.0 , Gapext 0.5

Searched: 262574 seqs, 29422322 residues

Total number of hits satisfying chosen parameters: 262574

Minimum DB seq length: 0  
 Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%  
 Maximum Match 100%  
 Listing first 45 summaries

Database : Issued\_Patents\_AA:\*

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2: /cgn2\_6/ptodata/1/aa/5B\_COMB.pep:\*

3: /cgn2\_6/ptodata/1/aa/6A\_COMB.pep:\*

4: /cgn2\_6/ptodata/1/aa/6B\_COMB.pep:\*

5: /cgn2\_6/ptodata/1/aa/PCITUS\_COMB.pep:\*

6: /cgn2\_6/ptodata/1/aa/backfilesl1.pep:\*

Pred. No. 19 is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

RESULT 1

US-08-496-847-35

Sequence 35, Application US/08496847

Patent No. 5795864

GENERAL INFORMATION:

APPLICANT: Amstutz, Gary A.

APPLICANT: Boversox, Stephen S.

APPLICANT: Gohil, Kishorchandra

APPLICANT: Adrijaensens, Peter I.

APPLICANT: Kristipati, Ramasharma

TITLE OF INVENTION: METHODS AND TITLE OF INVENTION: FORMULATIONS FOR PREVENTING PROGRESSION OF NEUROPATHIC PAIN

NUMBER OF SEQUENCES: 36

CORRESPONDENCE ADDRESS:

ADDRESSEE: Behlberger & Associates

STREET: 350 Cambridge Avenue, Suite 250

CITY: Palo Alto

STATE: CA

ZIP: 94306-1546

COMPUTER READABLE FORM:

COMPUTER: IBM Compatible

OPERATING SYSTEM: DOS

SOFTWARE: FASTSEQ for Windows Version 2.0

CURRENT APPLICATION DATA:

APPLICATION NUMBER: US/08/496,847

FILING DATE: 27-JUN-1995

CLASSIFICATION: 514

ATTORNEY/AGENT INFORMATION:

NAME: Stratford, Carol A

REGISTRATION NUMBER: 34,444

REFERENCE/DOCKET NUMBER: 5865-0009.31

TELECOMMUNICATION INFORMATION:

TELEPHONE: 650-324-0880

TELEFAX: 650-324-0960

INFORMATION FOR SEQ ID NO: 35:

SEQUENCE CHARACTERISTICS:

LENGTH: 25 amino acids

TYPE: amino acid

TOPOLOGY: linear

MOLECULE TYPE: Peptide

HYPOTHETICAL: NO

ORIGINAL SOURCE:

INDIVIDUAL ISOLATE: SNX-273, FIGURE 2

US-08-496-847-35

Query Match 82.4%; Score 126; DB 1; Length 25;

Best Local Similarity 80.0%; Pred. No. 3e-07;

Matches 20; Conservative 2; Mismatches 3; Indels 0; Gaps 0;

RESULT 2  
US-08-965-918-35  
; Sequence 35, Application US/0896918  
; Patent No. 5891849  
; GENERAL INFORMATION:  
; APPLICANT: Amstutz, Gary A.  
; APPLICANT: Bowersox, Stephen S.  
; APPLICANT: Gohil, Kishor Chandra  
; APPLICANT: Kristoffersen, Peter I.  
; APPLICANT: Ramasharma  
; TITLE OF INVENTION: METHODS AND FORMULATIONS FOR PREVENTING PROGRESSION OF NEUROPATHIC PAIN  
; NUMBER OF SEQUENCES: 36  
; CORRESPONDENCE ADDRESS:  
; ADDRESSEE: Dehlinger & Associates  
; STREET: 350 Cambridge Avenue, Suite 250  
; CITY: Palo Alto  
; STATE: CA  
; COUNTRY: US  
; ZIP: 94306-1546  
; COMPUTER READABLE FORM:  
; MEDIUM TYPE: Diskette  
; COMPUTER: IBM Compatible  
; OPERATING SYSTEM: DOS  
; SOFTWARE: FastSEQ for Windows Version 2.0  
; CURRENT APPLICATION DATA:  
; APPLICATION NUMBER: US/08/613,400A  
; FILING DATE: 08-MAR-1996  
; CLASSIFICATION: 514  
; PRIOR APPLICATION DATA:  
; APPLICATION NUMBER:  
; FILING DATE:  
; ATTORNEY/AGENT INFORMATION:  
; NAME: Stratford, Carol A.  
; REGISTRATION NUMBER: 34,444  
; REFERENCE/DOCKET NUMBER: 5865-0019  
; TELECOMMUNICATION INFORMATION:  
; TELEPHONE: 650-324-0880  
; TELEFAX: 650-324-0960  
; INFORMATION FOR SEQ ID NO: 35:  
; SEQUENCE CHARACTERISTICS:  
; LENGTH: 25 amino acids  
; TYPE: amino acid  
; TOPLOGY: linear  
; MOLECULE TYPE: protein  
; HYPOTHETICAL: NO  
; ORIGINAL SOURCE:  
; INDIVIDUAL ISOLATE: MVIA/SNX-111, FIGURE 2  
; US-08-965-918-35  
; ORIGINAL SOURCE:  
; INDIVIDUAL ISOLATE: SNX-273, FIGURE 2  
; Query Match 82.4%; Score 126; DB 2; Length 25;  
; Best Local Similarity 80.0%; Pred. No. 3e-07; 3; Indels 0; Gaps 0;  
; Matches 20; Conservative 2; Mismatches 3; APPLICANT: JUSTICE, ALAN  
; APPLICANT: SINGH, TEISTRAND  
; APPLICANT: GOHIL, KISHOR C  
; APPLICANT: VALENTINO, KAREN L  
; APPLICANT: MILJANICH, GEORGE P  
; TITLE OF INVENTION: METHODS OF PRODUCING ANALGESIA AND ENHANCING OPIATE ANALGESIA  
; NUMBER OF SEQUENCES: 34  
; CORRESPONDENCE ADDRESS:  
; ADDRESSEE: Law Offices of Peter Dehlinger  
; STREET: 350 Cambridge Avenue, Suite 300  
; CITY: Palo Alto  
; STATE: CA  
; COUNTRY: USA  
; ZIP: 94306  
; COMPUTER READABLE FORM:  
; MEDIUM TYPE: Floppy disk  
; COMPUTER: IBM PC compatible  
; OPERATING SYSTEM: PC-DOS/MS-DOS  
; SOFTWARE: Patentin Release #1.0, Version #1.25  
; CURRENT APPLICATION DATA:  
; TITLE OF INVENTION: IMPROVED EPIDURAL ANALGESIA  
; TITLE OF INVENTION: METHOD OF PRODUCING ANALGESIA  
; RESULT 3  
US-08-613-400A-35  
; Sequence 35, Application US/08613400A  
; Patent No. 6054429  
; GENERAL INFORMATION:  
; APPLICANT: Bowersox, S. Scott  
; APPLICANT: Gadois, Theresa  
; APPLICANT: Pettus, Mark R.  
; APPLICANT: Luther, Robert R.  
; TITLE OF INVENTION: IMPROVED EPIDURAL ANALGESIA  
; TITLE OF INVENTION: METHOD OF PRODUCING ANALGESIA

APPLICATION NUMBER: US/08/049,794  
 FILING DATE: 1990415  
 CLASSIFICATION: 514  
 PRIORITY APPLICATION DATA:  
 APPLICATION NUMBER: US 07/814,759  
 FILING DATE: 30-DEC-1991  
 ATTORNEY/AGENT INFORMATION:  
 NAME: Stratford, Carol A.  
 REGISTRATION NUMBER: 34,444  
 REFERENCE/DOCKET NUMBER: 55865-0009.30  
 TELECOMMUNICATION INFORMATION:  
 TELEPHONE: (415) 324-0880  
 TELEFAX: (415) 324-0960  
 INFORMATION FOR SEQ ID NO: 12:  
 SEQUENCE CHARACTERISTICS:  
 LENGTH: 25 amino acids  
 TYPE: amino acid  
 TOPOLOGY: linear  
 MOLECULE TYPE: protein  
 HYPOTHETICAL: NO  
 ORIGINAL SOURCE:  
 INDIVIDUAL ISOLATE: SNX-194, FIGURE 2  
 FEATURE:  
 NAME/KEY: Modified-site  
 LOCATION: 12  
 OTHER INFORMATION: /note- "where X is Nle"  
 ; US-08-049-794-12  
 Query Match 80.4%; Score 123; DB 1; Length 25;  
 Best Local Similarity 76.0%; Pred. No. 5e-07; 4; Indels 0; Gaps 0;  
 Matches 19; Conservative 2; Mismatches 4; Indels 0; Gaps 0;  
 QY 1 CKGTGKPCSRAYNCCGSCRSGKC 25  
 Db 1 CKGAGAKCSRRLXIDCCGSCRSGKC 25  
 RESULT 5  
 US-08-496-847-12  
 Sequence 12, Application US/08496847  
 PATENT NO. 5795864  
 GENERAL INFORMATION:  
 APPLICANT: Amstutz, Gary A.  
 APPLICANT: Bowersox, Stephen S.  
 APPLICANT: Gohil, Kishorchandra  
 APPLICANT: Adriaensens, Peter I.  
 APPLICANT: Kristpaci, Ramasharma  
 TITLE OF INVENTION: METHODS AND  
 NUMBER OF SEQUENCES: 36  
 CORRESPONDENCE ADDRESS:  
 ADDRESSEE: Dehlinger & Associates  
 STREET: 350 Cambridge Avenue, Suite 250  
 CITY: Palo Alto  
 STATE: CA  
 COUNTRY: USA  
 ZIP: 94306  
 COMPUTER READABLE FORM:  
 MEDIUM TYPE: Floppy disk  
 COMPUTER: IBM PC compatible  
 OPERATING SYSTEM: PC-DOS/MS-DOS  
 SOFTWARE: Patentin Release #1.0, Version #1.25.  
 CURRENT APPLICATION DATA:  
 APPLICATION NUMBER: US/08/742,774  
 FILING DATE:  
 CLASSIFICATION:  
 PRIORITY APPLICATION DATA:  
 APPLICATION NUMBER: 08-0675, 354  
 FILING DATE: 03-JUL-1996  
 APPLICATION NUMBER: US/08/049,794  
 FILING DATE: 1993-APR-15  
 APPLICATION NUMBER: US 07/814,759  
 FILING DATE: 30-DEC-1991  
 ATTORNEY/AGENT INFORMATION:  
 NAME: Stratford, Carol A.  
 REGISTRATION NUMBER: 34,444  
 REFERENCE/DOCKET NUMBER: 55865-0009.30  
 TELECOMMUNICATION INFORMATION:  
 TELEPHONE: (415) 324-0880  
 TELEFAX: (415) 324-0960  
 INFORMATION FOR SEQ ID NO: 12:  
 SEQUENCE CHARACTERISTICS:  
 LENGTH: 25 amino acids  
 TYPE: amino acid  
 TOPOLOGY: linear  
 MOLECULE TYPE: protein

HYPOTHETICAL: NO  
 ORIGINAL SOURCE: INDIVIDUAL ISOLATE: SNX-194, FIGURE 2  
 FEATURE: NAME/KEY: Modified-site  
 LOCATION: 12  
 OTHER INFORMATION: /note= "where x is Nle"  
 US-08-742-774-12

Query Match 80.4%; Score 123; DB 2; Length 25;  
 Best Local Similarity 76.0%; Pred. No. 6e-07;  
 Matches 19; Conservative 2; Mismatches 4; Indels 0; Gaps 0;  
 Db

RESULT 7  
 US-08-675-354-12  
 Sequence 12, Application US/08675354  
 Patent No. 5891849  
 GENERAL INFORMATION:  
 APPLICANT: JUSTICE, ALAN  
 APPLICANT: SINGH, TEIJINDER  
 APPLICANT: GOHLI, KISHOR C  
 APPLICANT: VALENTINO, KAREN L  
 APPLICANT: MILJANICH, GEORGE P  
 TITLE OF INVENTION: METHODS OF PRODUCING ANALGESIA AND  
 NUMBER OF SEQUENCES: 34  
 CORRESPONDENCE ADDRESS:  
 ADDRESSEE: Law Offices of Peter Dehlinger  
 STREET: 350 Cambridge Avenue, Suite 300  
 CITY: Palo Alto  
 STATE: CA  
 COUNTRY: USA  
 ZIP: 94306  
 COMPUTER READABLE FORM:  
 MEDIUM TYPE: Floppy disk  
 COMPUTER: IBM PC compatible  
 OPERATING SYSTEM: PC-DOS/MS-DOS  
 SOFTWARE: Patentin Release #1.0, Version #1.25  
 CURRENT APPLICATION DATA:  
 APPLICATION NUMBER: US/08/675, 354  
 FILING DATE: 03-JUL-1996  
 CLASSIFICATION: 530  
 PRIORITY APPLICATION DATA:  
 APPLICATION NUMBER: US/08/049, 794  
 FILING DATE: 1993-APR-15  
 APPLICATION NUMBER: US/07/814, 759  
 FILING DATE: 30-DEC-1991  
 ATTORNEY/AGENT INFORMATION:  
 NAME: Stratford, Carol A.  
 REGISTRATION NUMBER: 34,444  
 REFERENCE/DOCKET NUMBER: 5865-0009.30  
 TELECOMMUNICATION INFORMATION:  
 TELEPHONE: 650-324-0880  
 TELEFAX: 650-324-0960  
 INFORMATION FOR SEQ ID NO: 12:  
 SEQUENCE CHARACTERISTICS:  
 LENGTH: 25 amino acids  
 TYPE: amino acid  
 TOPOLOGY: linear  
 MOLECULE TYPE: protein  
 HYPOTHETICAL: NO  
 ORIGINAL SOURCE: INDIVIDUAL ISOLATE: SNX-194, FIGURE 2  
 FEATURE: NAME/KEY: Modified-site  
 LOCATION: 12  
 OTHER INFORMATION: /note= "where x is Nle"  
 US-08-965-918-12

Query Match 80.4%; Score 123; DB 2; Length 25;  
 Best Local Similarity 76.0%; Pred. No. 6e-07;  
 Matches 19; Conservative 2; Mismatches 4; Indels 0; Gaps 0;  
 Db

RESULT 8  
 US-08-965-918-12  
 Sequence 12, Application US/08665918  
 Patent No. 5891849  
 GENERAL INFORMATION:  
 APPLICANT: Amstutz, Gary A.  
 APPLICANT: Bowersox, Stephen S.  
 APPLICANT: Goill, Kishorchandra  
 APPLICANT: Adriaensens, Peter I.  
 APPLICANT: Kistipati, Ramasharma  
 TITLE OF INVENTION: METHODS AND FORMULATIONS FOR PREVENTING  
 TITLE OF INVENTION: PROGRESSION OF NEUROPATHIC PAIN  
 NUMBER OF SEQUENCES: 36  
 CORRESPONDENCE ADDRESS:  
 ADDRESSEE: Dehlinger & Associates  
 STREET: 350 Cambridge Avenue, Suite 250  
 CITY: Palo Alto  
 STATE: CA  
 COUNTRY: US  
 ZIP: 94306-1546  
 COMPUTER READABLE FORM:  
 MEDIUM TYPE: Diskette  
 COMPUTER: IBM Compatible  
 OPERATING SYSTEM: DOS  
 SOFTWARE: FASTSEQ for Windows Version 2.0  
 CURRENT APPLICATION DATA:  
 APPLICATION NUMBER: US/08/965, 918  
 FILING DATE: 07-NOV-1997  
 ATTORNEY/AGENT INFORMATION:  
 NAME: Mohr, Judy M.  
 REGISTRATION NUMBER: 38, 563  
 REFERENCE/DOCKET NUMBER: 5865-0009.34  
 TELECOMMUNICATION INFORMATION:  
 TELEPHONE: 650-324-0880  
 TELEFAX: 650-324-0960  
 INFORMATION FOR SEQ ID NO: 12:  
 SEQUENCE CHARACTERISTICS:  
 LENGTH: 25 amino acids  
 TYPE: amino acid  
 TOPOLOGY: linear  
 MOLECULE TYPE: protein  
 HYPOTHETICAL: NO  
 ORIGINAL SOURCE: INDIVIDUAL ISOLATE: SNX-194, FIGURE 2  
 FEATURE: NAME/KEY: Modified-site  
 LOCATION: 12  
 OTHER INFORMATION: /note= "where x is Nle"  
 US-08-965-918-12

Query Match 80.4%; Score 123; DB 2; Length 25;  
 Best Local Similarity 76.0%; Pred. No. 6e-07;  
 Matches 19; Conservative 2; Mismatches 4; Indels 0; Gaps 0;  
 Db

RESULT 9  
 US-08-675-354-12  
 Sequence 12, Application US/09138439  
 ; sequence 12, Application US/09138439

PATENT NO. 5994305

GENERAL INFORMATION:

APPLICANT: JUSTICE, ALAN

APPLICANT: SINGH, TEIJINDER

APPLICANT: GOHIL, KISHOR C

APPLICANT: VALENTINO, KAREN L

APPLICANT: MILIANICH, GEORGE P

TITLE OF INVENTION: METHODS OF PRODUCING ANALGESIA AND ENHANCING OPIATE ANALGESIA

NUMBER OF SEQUENCES: 34

CORRESPONDENCE ADDRESS:

ADDRESSEE: Law Offices of Peter Dehlinger

STREET: 350 Cambridge Avenue, Suite 300

CITY: Palo Alto

STATE: CA

COUNTY: USA

ZIP: 94306

COMPUTER READABLE FORM:

MEDIUM TYPE: Floppy disk

COMPUTER: IBM PC compatible

OPERATING SYSTEM: PC-DOS/MS-DOS

SOFTWARE: Patentin Release #1.0, Version #1.25

CURRENT APPLICATION DATA:

APPLICATION NUMBER: US/09/138,439

FILING DATE:

CLASSIFICATION:

PRIOR APPLICATION DATA:

APPLICATION NUMBER: US/08/049,794

FILING DATE: 1993-04-15

APPLICATION NUMBER: US 07/814,759

FILING DATE: 30-DEC-1991

ATTORNEY/AGENT INFORMATION:

NAME: Stratford, Carol A.

REGISTRATION NUMBER: 34,444

REFERENCE/DOCKET NUMBER: 5865-0009-30

TELEPHONE: (415) 324-0880

TELEFAX: (415) 324-0960

INFORMATION FOR SEQ ID NO: 12:

SEQUENCE CHARACTERISTICS:

LENGTH: 25 amino acids

TYPE: amino acid

TOPOLOGY: linear

MOLECULE TYPE: protein

HYPOTHETICAL: NO

ORIGINAL SOURCE:

INDIVIDUAL ISOLATE: SNX-194, FIGURE 2

FEATURE:

NAME/KEY: Modified site

LOCATION: 12

OTHER INFORMATION: /note= "where x is Nle"

US-09-138-439-12

RESULT 10

Query Match 80.4%; Score 123; DB 2; Length 25

Best Local Similarity 76.0%; Prod. No. 6e-07; 4; Indels 19;

Matches 19; Conservative 2; Mismatches 4; Indels 19;

GENERAL INFORMATION:

APPLICANT: Bowersox, S. Scott

APPLICANT: Gadbois, Theresa

APPLICANT: Pettus, Mark, R.

APPLICANT: Luther, Robert, R.

TITLE OF INVENTION: IMPROVED EPIDURAL

TITLE OF INVENTION: METHOD OF PRODUCING ANALGESIA

US 08-613-400A-12

; Sequence 12, Application US/08613400A

; Patent No. 6054429

QY 1 CKGKGKPGESRIAVNCCTGCSRSGKC 25

Db 1 CKGNGAKSRSRXLXDCGCSRSGKC 25

NUMBER OF SEQUENCES: 36  
 CORRESPONDENCE ADDRESS: 36  
 ADDRESSEE: Dehlinger & Associates  
 STREET: 350 Cambridge Avenue, Suite 250  
 CITY: Palo Alto  
 STATE: CA  
 COUNTRY: US  
 ZIP: 94306-1546  
 COMPUTER READABLE FORM:  
 MEDIUM TYPE: Diskette  
 COMPUTER: IBM Compatible  
 OPERATING SYSTEM: DOS  
 SOFTWARE: FastSEQ for Windows Version 2.0  
 CURRENT APPLICATION DATA:  
 APPLICATION NUMBER: US/08/613,400A  
 FILING DATE: 08-MAR-1996  
 CLASSIFICATION: 514  
 PRIOR APPLICATION DATA:  
 APPLICATION NUMBER:  
 FILING DATE:  
 ATTORNEY/AGENT INFORMATION:  
 NAME: Stafford, Carol A  
 REGISTRATION NUMBER: 34,444  
 REFERENCE/DOCKET NUMBER: 5865-0019  
 TELECOMMUNICATION INFORMATION:  
 TELEPHONE: 650-324-0880  
 TELEFAX: 650-324-0960  
 INFORMATION FOR SEQ ID NO: 12:  
 SEQUENCE CHARACTERISTICS:  
 LENGTH: 25 amino acids  
 TYPE: amino acid  
 TOPOLOGY: linear  
 MOLECULE TYPE: protein  
 HYPOTHETICAL: NO  
 ORIGINAL SOURCE:  
 INDIVIDUAL ISOLATE: SNX-194, FIGURE 2  
 FEATURE:  
 NAME/KEY: Modified-site  
 LOCATION: 12  
 OTHER INFORMATION: /note/ "where X is Nle"  
 US-08-613-400A-12

RESULT 11  
 US-09-98-017-12  
 Sequence 12, Application US/09298017  
 ; Patent No. 6087091  
 GENERAL INFORMATION:  
 APPLICANT: JUSTICE, ALAN  
 APPLICANT: SINGH, TEJINDER  
 APPLICANT: GOHIL, KISHOR C  
 APPLICANT: VALENTINO, KAREN L  
 APPLICANT: MILJANICH, GEORGE P  
 TITLE OF INVENTION: METHODS OF PRODUCING ANALGESIA AND  
 TITLE OF INVENTION: ENHANCING OPIATE ANALGESIA  
 NUMBER OF SEQUENCES: 34  
 CORRESPONDENCE ADDRESS:  
 ADDRESSEE: Law Offices of Peter Dehlinger  
 STREET: 350 Cambridge Avenue, Suite 300  
 CITY: Palo Alto  
 STATE: CA  
 COUNTRY: USA  
 ZIP: 94305  
 COMPUTER READABLE FORM:  
 MEDIUM TYPE: Floppy disk



TELECOMMUNICATION INFORMATION:  
 TELEPHONE: (415) 324-0880  
 FAX: (415) 324-0960  
 INFORMATION FOR SEQ ID NO: 9:  
 SEQUENCE CHARACTERISTICS:  
 LENGTH: 25 amino acids  
 TYPE: AMINO ACID  
 TOPOLOGY: both  
 MOLECULE TYPE: peptide  
 HYPOTHETICAL: NO  
 ANTI-SENSE: NO  
 ORIGINAL SOURCE:  
 INDIVIDUAL ISOLATE: SNX-190  
 US-07-789-913-9

Query Match Similarity 79.7%; Score 122; DB 1; Length 25;  
 Best Local Similarity 76.0%; Pred. No. 7.7e-07;  
 Matches 19; Conservative 2; Mismatches 4; Indels 0; Gaps 0;

QY 1 CKGTGKPCSRAYNCTGSCRSGKC 25  
 Db 1 CKGAGAKCSRMLYDCTGSCRSGKC 25

RESULT 14  
 US-07-789-913-12  
 Sequence 12, Application US/0779913  
 Patent No. 5559095  
 GENERAL INFORMATION:  
 APPLICANT: Miljanich, George P.  
 APPLICANT: Bowersox, Stephen S.  
 APPLICANT: Fox, James A.  
 APPLICANT: Valentino, Karen L.  
 APPLICANT: Blitner, Robert S.  
 APPLICANT: Yamashiro, Donald H.  
 TITLE OF INVENTION: Delayed Treatment Method of Reducing  
 TITLE OF INVENTION: Ischemia-Related Neuronal Damage  
 NUMBER OF SEQUENCES: 28  
 CORRESPONDENCE ADDRESS:  
 ADDRESSEE: Law Offices of Peter Dehlinger  
 STREET: 350 Cambridge Avenue, Suite 300  
 CITY: Palo Alto  
 STATE: CA  
 COUNTRY: USA  
 ZIP: 94306

COMPUTER READABLE FORM:  
 MEDIUM TYPE: Floppy disk  
 OPERATING SYSTEM: PC-DOS/MS-DOS  
 SOFTWARE: Patentin Release #1.0, Version #1.25

CURRENT APPLICATION DATA:  
 APPLICATION NUMBER: US/07/789, 913  
 FILING DATE: 1991112  
 CLASSIFICATION: 514

PRIOR APPLICATION DATA:  
 APPLICATION NUMBER: US 07/561, 766  
 FILING DATE: 02-AUG-1990

PRIOR APPLICATION DATA:  
 APPLICATION NUMBER: US 07/440, 094  
 FILING DATE: 22-NOV-1989

ATTORNEY/AGENT INFORMATION:  
 NAME: Stratford, Carol A.  
 REGISTRATION NUMBER: 34,444

TELECOMMUNICATION INFORMATION:  
 TELEPHONE: (415) 324-0880  
 FAX: (415) 324-0960  
 INFORMATION FOR SEQ ID NO: 9:  
 SEQUENCE CHARACTERISTICS:  
 LENGTH: 25 amino acids  
 TYPE: AMINO ACID  
 TOPOLOGY: linear  
 MOLECULE TYPE: protein  
 HYPOTHETICAL: NO  
 ORIGINAL SOURCE:  
 INDIVIDUAL ISOLATE: SNX-190, FIGURE 2  
 US-08-049-794-9

Query Match Similarity 79.7%; Score 122; DB 1; Length 25;  
 Best Local Similarity 76.0%; Pred. No. 7.7e-07;  
 Matches 19; Conservative 2; Mismatches 4; Indels 0; Gaps 0;

QY 1 CKGTGKPCSRAYNCTGSCRSGKC 25  
 Db 1 CKGAGAKCSRMLYDCTGSCRSGKC 25

RESULT 15  
 US-08-049-794-9  
 Sequence 9, Application US/08049794  
 Patent No. 5587454  
 GENERAL INFORMATION:  
 APPLICANT: JUSTICE, ALAN  
 APPLICANT: SINGH, TEJINDER  
 APPLICANT: GOHIL, KISHOR C  
 APPLICANT: VALENTINO, KAREN L  
 APPLICANT: MILJANICH, GEORGE P  
 TITLE OF INVENTION: METHODS OF PRODUCING ANALGESIA AND  
 TITLE OF INVENTION: ENHANCING OPIATE ANALGESIA  
 NUMBER OF SEQUENCES: 34  
 CORRESPONDENCE ADDRESS:  
 ADDRESSEE: Law Offices of Peter Dehlinger  
 STREET: 350 Cambridge Avenue, Suite 300  
 CITY: Palo Alto  
 STATE: CA  
 COUNTRY: USA  
 ZIP: 94306

COMPUTER READABLE FORM:  
 MEDIUM TYPE: Floppy disk  
 COMPUTER: IBM PC compatible  
 OPERATING SYSTEM: PC-DOS/MS-DOS  
 SOFTWARE: Patentin Release #1.0, Version #1.25

CURRENT APPLICATION DATA:  
 APPLICATION NUMBER: US/08/049, 794  
 FILING DATE: 19930415  
 CLASSIFICATION: 514

PRIOR APPLICATION DATA:  
 APPLICATION NUMBER: US 07/814, 759  
 FILING DATE: 30-DEC-1991

ATTORNEY/AGENT INFORMATION:  
 NAME: Stratford, Carol A.  
 REGISTRATION NUMBER: 34,444

REFERENCE/DOCKET NUMBER: 5865-0009..30  
 TELECOMMUNICATION INFORMATION:  
 TELEPHONE: (415) 324-0880  
 FAX: (415) 324-0960  
 INFORMATION FOR SEQ ID NO: 9:  
 SEQUENCE CHARACTERISTICS:  
 LENGTH: 25 amino acids  
 TYPE: AMINO ACID  
 TOPOLOGY: linear  
 MOLECULE TYPE: protein  
 HYPOTHETICAL: NO  
 ORIGINAL SOURCE:  
 INDIVIDUAL ISOLATE: SNX-190, FIGURE 2  
 US-08-049-794-9

Query Match Similarity 79.7%; Score 122; DB 1; Length 25;  
 Best Local Similarity 76.0%; Pred. No. 7.7e-07;  
 Matches 19; Conservative 2; Mismatches 4; Indels 0; Gaps 0;

Tue Jul 1 11:02:04 2003

us-09-910-082a-375.rai

Page 8

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Search completed: July 1, 2003, 10:53:55  
Job time : 7.25 secs

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GenCore version 5.1.6

OM protein - protein search, using sw model

Run on: July 1, 2003, 10:41:52 ; Search time 25.7812 Seconds (without alignments)

129.213 Million cell updates/sec

Title: US-09-910-082a-375

Perfect score: 153

Sequence: CKGTGKPCSRAYNCCTGSCRSKGC 25

Scoring table: BLOSUM62

Gappen 10.0 , Gapext 0.5

Searched: 908470 seqs, 133250620 residues

Total number of hits satisfying chosen parameters: 908470

Minimum DB seq length: 0

Maximum DB seq length: 200000000

Post-processing: Minimum Match 0%

Listing first 45 summaries

Database :

1: A\_Geneeq\_101002:\*

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2: /SDS2/gcdata/geneseq/geneseqp-emb1/AA1981.DAT:\*

3: /SDS2/gcdata/geneseq/geneseqp-emb1/AA1982.DAT:\*

4: /SDS2/gcdata/geneseq/geneseqp-emb1/AA1983.DAT:\*

5: /SDS2/gcdata/geneseq/geneseqp-emb1/AA1984.DAT:\*

6: /SDS2/gcdata/geneseq/geneseqp-emb1/AA1985.DAT:\*

7: /SDS2/gcdata/geneseq/geneseqp-emb1/AA1986.DAT:\*

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9: /SDS2/gcdata/geneseq/geneseqp-emb1/AA1988.DAT:\*

10: /SDS2/gcdata/geneseq/geneseqp-emb1/AA1989.DAT:\*

11: /SDS2/gcdata/geneseq/geneseqp-emb1/AA1990.DAT:\*

12: /SDS2/gcdata/geneseq/geneseqp-emb1/AA1991.DAT:\*

13: /SDS2/gcdata/geneseq/geneseqp-emb1/AA1992.DAT:\*

14: /SDS2/gcdata/geneseq/geneseqp-emb1/AA1993.DAT:\*

15: /SDS2/gcdata/geneseq/geneseqp-emb1/AA1995.DAT:\*

16: /SDS2/gcdata/geneseq/geneseqp-emb1/AA1996.DAT:\*

17: /SDS2/gcdata/geneseq/geneseqp-emb1/AA1997.DAT:\*

18: /SDS2/gcdata/geneseq/geneseqp-emb1/AA1998.DAT:\*

19: /SDS2/gcdata/geneseq/geneseqp-emb1/AA1999.DAT:\*

20: /SDS2/gcdata/geneseq/geneseqp-emb1/AA2000.DAT:\*

21: /SDS2/gcdata/geneseq/geneseqp-emb1/AA2001.DAT:\*

22: /SDS2/gcdata/geneseq/geneseqp-emb1/AA2002.DAT:\*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match length	DB ID	Description
1	153	100.0	25 23 ABB96833	Omega-conopeptide
2	153	100.0	25 23 ABB96867	Omega-conopeptide
3	153	100.0	71 23 ABB96629	Omega-conopeptide
4	153	100.0	71 23 ABB96657	Omega-conopeptide
5	152	99.3	25 23 ABB96930	Omega-conopeptide
6	152	99.3	71 23 ABB96634	Omega-conopeptide
7	144	94.1	25 23 ABB96815	Omega-conopeptide
8	144	94.1	71 23 ABB96607	Omega-conopeptide
9	142	92.8	25 21 AAY87541	Mature conotoxin P
10	142	92.8	71 21 AAY87541	Conotoxin peptide

ALIGNMENTS

RESULT 1

ID ABB96833

ABB96833 standard; Peptide; 25 AA.

XX AC ABB96833;

XX DT 12-JUL-2002 ( first entry)

XX DE Omega-conopeptide Cn6.2 toxin sequence.

XX KW Omega-conopeptide; analgesic; anticonvulsant; vasotrophic; cardiotonic; neuroprotective; cerebroprotective; cardiovascular; antiinflammatory; antidiabetic; tranquiliser; vasoconstrictor; seizure; epileptic; analgesic; neuroleptic; voltage gated ion channel; ischaemia; neurological disorder; neurotoxic injury; hypoxia; anoxia; stroke; spinal chord trauma; stroke; cerebrovascular accident; brain trauma; spinal chord; migraine; inflammation; perinatal asphyxia; hypoglycaemic event; pain; psychosis; anxiety; schizophrenia.

XX OS Conus censors.

XX PN WO200207675-A2.

XX PD 31-JAN-2002.

XX PF 23-JUL-2001; 2001WO-US23041.

XX PR 21-JUL-2000; 2000US-219616P.

PR 05-FEB-2001; 2001US-265888P.

XX PA (UTAH ) UNIV UTAH RBS FOUND.

PA (COGN- ) COGNETIX INC.

XX PA (UTAH ) UNIV UTAH RES FOUND.

XX PA (COGN- ) COGNETIX INC.

XX PI Olivera BM, McIntosh JM, Watkins M, Garrett JE, Shon K;

XX PI Jacobsen R, Jones RM, Cartier GE;

XX DR

XX WPI; 2002-257318/30.

PT New omega-conopeptides useful for treating disorders associated with voltage gated ion channels e.g. pain, inflammation, neurological or cardiovascular disorders -

XX PT

PT New omega-conopeptides useful for treating disorders associated with voltage gated ion channels e.g. pain, inflammation, neurological or cardiovascular disorders -

XX PS

PS Claim 1(a); Page 71; 195pp; English.

CC The invention relates to isolated omega-conopeptides, nucleic acid sequences encoding them, and propeptide sequences. The activity of the peptides of the invention may be described as, analgesic, anticonvulsant, vasoconstrictive, cardiotonic, neuroprotective, cerebroprotective, cardiovascular, antiinflammatory, antimigraine, antidiabetic, tranquiliser, vasoconstrictive, antipsychotic, anxiolytic and neuroleptic. Peptides of the invention act by modulating the activity of voltage gated ion channels. They may be used for treating or preventing disorders associated with voltage gated ion channels such as neurological disorders, e.g. seizure (associated with epilepsy), neurotoxic injury associated with conditions of hypoxia, anoxia, ischaemia, stroke, cerebrovascular accident, brain or spinal chord trauma, drowning, suffocation, perinatal asphyxia or hypoglycaemic events; pain e.g. migraine; inflammation or cardiovascular disorders. They may also be used for treating psychiatric disorders e.g. psychosis, anxiety or schizophrenia. The analgesic agents of the invention show diminished side effects and toxicity, and are non-addictive. The sequences given in records ABB96807-ABB96905 represent omega-conopeptide toxin sequences.

XX Sequence 25 AA;

Query Match 100.0%; Score 153; DB 23; length 25; Best Local Similarity 100.0%; Pred. No. 1.6e-10; Mismatches 25; Matches 0; Indels 0; Gaps 0;

QY 1 CKGTGKPCSMIAYNCTGSCRSGKC 25  
Db 1 CKGTGKPCSRAYNCTGSCRSGKC 25

RESULT 2

ABB96867  
ID ABB96867 standard; Peptide; 25 AA.

XX AC

XX ABB96867;

DT 12-JUL-2002 (first entry)

DE Omega-conopeptide M6.1 toxin sequence.

XX Omega-conopeptide; analgesic; anticonvulsant; vasoconstrictive, cardiovascular, antiinflammatory; tranquiliser; vasoconstrictive, antipsychotic; anxiolytic; neuroleptic; voltage gated ion channel; seizure; epilepsy; neurological disorder; neurotoxic injury; hypoxia; anoxia; ischaemia; stroke; cerebrovascular accident; brain trauma; spinal chord trauma; drowning; suffocation; perinatal asphyxia; hypoglycaemic event; pain; migraine; inflammation; cardiovascular disorder; psychiatric disorder; psychosis; anxiety; schizophrenia.

XX OS Conus magus.

XX PN WO200207675-A2.

XX PD 31-JAN-2002.

XX PF 23-JUL-2001; 2001WO-US23041.  
XX PR 21-JUL-2000; 2000US-219616P.  
XX PR 05-FEB-2001; 2001US-265888P.  
XX

XX PA (UTAH ) UNIV UTAH RES FOUND.

XX PA (COGN- ) COGNETIX INC.

XX PI Olivera BM, McIntosh JM, Watkins M, Garrett JE, Shon K;

XX PI Jacobsen R, Jones RM, Cartier GE;

XX DR

XX WPI; 2002-257318/30.

PT New omega-conopeptides useful for treating disorders associated with voltage gated ion channels e.g. pain, inflammation, neurological or cardiovascular disorders -

XX PT

PT New omega-conopeptides useful for treating disorders associated with voltage gated ion channels e.g. pain, inflammation, neurological or cardiovascular disorders -

XX PS

PS Claim 1(a); Page 72; 195pp; English.

CC The invention relates to isolated omega-conopeptides, nucleic acid sequences encoding them, and propeptide sequences. The activity of the peptides of the invention may be described as, analgesic, anticonvulsant, vasoconstrictive, cardiotonic, neuroprotective, cerebroprotective, cardiovascular, antiinflammatory, antimigraine, antidiabetic, tranquiliser, vasoconstrictive, antipsychotic, anxiolytic and neuroleptic. Peptides of the invention act by modulating the activity of voltage gated ion channels. They may be used for treating or preventing disorders associated with voltage gated ion channels such as neurological disorders, e.g. seizure (associated with epilepsy), neurotoxic injury associated with conditions of hypoxia, anoxia, ischaemia, stroke, cerebrovascular accident, brain or spinal chord trauma, drowning, suffocation, perinatal asphyxia or hypoglycaemic events; pain e.g. migraine; inflammation or cardiovascular disorders. They may also be used for treating psychiatric disorders e.g. psychosis, anxiety or schizophrenia. The analgesic agents of the invention show diminished side effects and toxicity, and are non-addictive. The sequences given in records ABB96807-ABB96905 represent omega-conopeptide toxin sequences.

XX Sequence 25 AA;

Query Match 100.0%; Score 153; DB 23; length 25; Best Local Similarity 100.0%; Pred. No. 1.6e-10; Mismatches 25; Matches 0; Indels 0; Gaps 0;

QY 1 CKGTGKPCSRAYNCTGSCRSGKC 25  
Db 1 CKGTGKPCSRAYNCTGSCRSGKC 25

RESULT 3

ABB96629  
ID ABB96629 standard; Peptide; 71 AA.

XX AC

XX ABB96629;

DT 12-JUL-2002 (first entry)

DE Omega-conopeptide Cn6.2 propeptide.

XX Omega-conopeptide; analgesic; anticonvulsant; vasoconstrictive, cardiovascular, antiinflammatory; tranquiliser; vasoconstrictive, antipsychotic; anxiolytic; neuroleptic; voltage gated ion channel; seizure; epilepsy; neurological disorder; neurotoxic injury; hypoxia; anoxia; ischaemia; stroke; cerebrovascular accident; brain trauma; spinal chord trauma; drowning; suffocation; perinatal asphyxia; hypoglycaemic event; pain; migraine; inflammation; cardiovascular disorder; psychiatric disorder; psychosis; anxiety; schizophrenia.

XX OS Conus censors.

XX PN WO200207675-A2.

XX PD 31-JAN-2002.

XX PF 23-JUL-2001; 2001WO-US23041.  
XX PR 21-JUL-2000; 2000US-219616P.  
XX PR 05-FEB-2001; 2001US-265888P.  
XX







XX Mature conotoxin; brocade cone shell; line cone shell; drug screening;  
 KW neuronal inhibitor; muscle inhibitor; analgesic.  
 XX  
 OS Conus sp.  
 XX CN1237584-A.  
 PN 08-DEC-1999.  
 XX  
 PD 08-DEC-1999.  
 XX  
 PR 30-APR-1999; 99CN-0106070.  
 XX  
 PR 30-APR-1999; 99CN-0106070.  
 XX  
 PA (BIOL-) BIOLOGICAL ENG INST ACAD MILITARY MEDICI.  
 XX  
 PI Lu B, Huang P;  
 XX  
 DR WPI; 2000-351193/31.  
 XX  
 PT Conotoxin peptide from brocade cone shells useful as analgesic -  
 XX  
 PS Claim 1A; Page 5; 20pp; Chinese.  
 XX  
 The invention relates to 14 novel mature conotoxin peptides from marine  
 CC snails (Conus species); conotoxin precursor proteins; and cDNAs  
 CC encoding the conotoxin precursors. The mature peptide sequences were  
 CC discovered by obtaining conotoxin cDNA sequences from mRNA from the  
 CC brocade cone shell (Conus textile) or the line cone shell (Conus  
 CC striatus). The cDNA sequences were used to determine the conotoxin  
 CC precursor protein sequences, and the sequences of the mature conotoxin  
 CC peptides were inferred from the precursor sequences. The mature  
 CC conotoxin peptides can be obtained via chemical synthesis or by in vitro  
 CC gene expression. Conotoxins inhibit the function of neurons and muscle  
 CC cells. Certain conotoxins interfere with synaptic transmission, while  
 CC others act on muscle or at the neuromuscular junction. The 14 novel  
 CC conotoxins have unique receptor specificity and affinity, so can be  
 CC used as screening tools to identify new drugs. Conotoxin #11 (AY87540)  
 CC may be used for pain relief. Sequences AAY87420, AAY87522, AAY87524,  
 CC AAY87526, AAY87528, AAY87530, AAY87532, AAY87534, AAY87536, AAY87538,  
 CC AAY87540, AAY87542, AAY87544 and AAY87546 represent mature conotoxins  
 CC #1-#14, respectively.  
 XX  
 SQ Sequence 25 AA;  
 Query Match 92.8%; Score 142; DB 21; Length 25;  
 Best Local Similarity 92.0%; Pred. No. 2.e-09;  
 Matches 23; Conservative 0; Mismatches 2; Indels 0; Gaps 0;  
 Qy 1 CKGIGKPCSRAYNCCTGSCRSRGKC 25  
 Db 1 CKAAGKPCSRAYNCCTGSCRSRGKC 25

RESULT 10  
 AAY87541  
 ID AAY87541 standard; protein; 71 AA.  
 XX  
 AC AAY87541;  
 XX  
 DT 18-JUL-2000 (first entry)  
 DE Conotoxin peptide #11 precursor.  
 XX  
 KW Conotoxin precursor; brocade cone shell; line cone shell; drug screening;  
 KW neuronal inhibitor; muscle inhibitor; analgesic.  
 XX  
 OS Conus sp.  
 XX  
 Key Location/Qualifiers  
 FH Misc-difference 6  
 FT /note= "Encoded by ATG",  
 XX

PN CN1237584-A.  
 XX  
 PD 08-DEC-1999.  
 XX  
 PR 30-APR-1999; 99CN-0106070.  
 XX  
 PA (BIOL-) BIOLOGICAL ENG INST ACAD MILITARY MEDICI.  
 XX  
 PI Lu B, Huang P;  
 XX  
 DR WPI; 2000-351193/31.  
 XX  
 PT N-PSDB; AAA10463.  
 XX  
 PS Conotoxin peptide from brocade cone shells useful as analgesic -  
 XX  
 Claim 1A; Page 5-6; 20pp; Chinese.  
 XX  
 The invention relates to 14 novel mature conotoxin peptides from marine  
 CC snails (Conus species); conotoxin precursor proteins; and cDNAs  
 CC encoding the conotoxin precursors. The mature peptide sequences were  
 CC discovered by obtaining conotoxin cDNA sequences from mRNA from the  
 CC brocade cone shell (Conus textile) or the line cone shell (Conus  
 CC striatus). The cDNA sequences were used to determine the conotoxin  
 CC precursor protein sequences, and the sequences of the mature conotoxin  
 CC peptides were inferred from the precursor sequences. The mature  
 CC conotoxin peptides can be obtained via chemical synthesis or by in vitro  
 CC gene expression. Conotoxins inhibit the function of neurons and muscle  
 CC cells. Certain conotoxins interfere with synaptic transmission, while  
 CC others act on muscle or at the neuromuscular junction. The 14 novel  
 CC conotoxins have unique receptor specificity and affinity, so can be  
 CC used as screening tools to identify new drugs. Conotoxin #11 (AY87540)  
 CC may be used for pain relief. Sequences AAY87420, AAY87522, AAY87524,  
 CC AAY87526, AAY87528, AAY87530, AAY87532, AAY87534, AAY87536, AAY87538,  
 CC AAY87540, AAY87542, AAY87544 and AAY87546 represent the precursors of  
 CC conotoxins #1-#14, respectively.  
 XX  
 SQ Sequence 71 AA;  
 Query Match 92.8%; Score 142; DB 21; Length 71;  
 Best Local Similarity 92.0%; Pred. No. 6.2e-09;  
 Matches 23; Conservative 0; Mismatches 2; Indels 0; Gaps 0;  
 Qy 1 CKGIGKPCSRAYNCCTGSCRSRGKC 25  
 ID ABB96817  
 XX  
 AC ABB96817;  
 XX  
 DT 12-JUL-2002 (first entry)  
 DE Omega-conopeptide Ay6.3 toxin sequence.  
 XX  
 KW Omega-conopeptide; analgesic; anticonvulsant; vasotropic; cardiotonic;  
 KW neuroprotective; cerebroprotective; cardiovascular; antiinflammatory;  
 KW antimigraine; antidiabetic; tranquiliser; vasoconstrictor; antipsychotic;  
 KW anxiolytic; neuroleptic; voltage gated ion channel; seizure; epilepsy;  
 KW neurological disorder; neurotoxic injury; hypoxia; anoxia; ischaemia;  
 KW stroke; cerebrovascular accident; brain trauma; spinal chord trauma;  
 KW drowning; suffocation; perinatal asphyxia; hypoglycaemic event; pain;  
 KW migraine; inflammation; cardiovascular disorder; psychiatric disorder;  
 KW psychosis; anxiety; schizophrenia.  
 XX  
 OS Conus aurisicus.  
 XX  
 PN WO200207675-A2.



KW psychosis; anxiety; schizophrenia.  
 XX  
 OS conus monachus.  
 XX  
 PN WO200207675-A2.  
 XX  
 PD 31-JAN-2002.  
 XX  
 PR 23-JUL-2001; 2001WO-US23041.  
 XX  
 PR 21-JUL-2000; 2000US-219616P.  
 XX  
 PR 05-FEB-2001; 2001US-265888P.  
 PA (UTAH ) UNIV UTAH RES FOUND.  
 PA (COGN-) COGNETIX INC.  
 XX  
 PT Olivera BM, McIntosh JM, Watkins M, Garrett JE, Shon K;  
 PT Jacobsen R, Jones RM, Cartier GE;  
 XX  
 DR WPI; 2002-257318/30.  
 PT  
 PT voltage gated ion channels e.g. pain, inflammation, neurological or  
 cardiovascular disorders -  
 PS claim 1(a); Page 72; 195pp; English.  
 XX  
 CC The invention relates to isolated omega-conopeptides, nucleic acid  
 sequences encoding them, and propeptide sequences. The activity of  
 the peptides of the invention may be described as, analgesic,  
 anticonvulsant, vasotrophic, cardiant, neuroprotective, cerebroprotective,  
 cardiovascular, antiinflammatory, antimigraine, antidiabetic,  
 tranquiliser, vulnerary, antipsychotic, anxiolytic and neuroleptic.  
 CC Peptides of the invention act by modulating the activity of voltage gated  
 ion channels. They may be used for treating or preventing disorders  
 associated with voltage gated ion channels such as neurological  
 disorders, e.g. seizure (associated with epilepsy), neurotoxic injury  
 associated with conditions of hypoxia, anoxia, ischaemia, stroke,  
 cerebrovascular accident, brain or spinal chord trauma, drowning,  
 CC suffocation, perinatal asphyxia or hypoglycaemic events; pain also e.g.  
 CC migraine, inflammation or cardiovascular disorders. They may also be used  
 for treating psychiatric disorders e.g. psychosis, anxiety or  
 CC schizophrenia. The analgesic agents of the invention show diminished side  
 effects and toxicity, and are non-addictive. The sequences given in  
 CC records ABB96807-ABB96905 represent omega-conopeptide toxin sequences.  
 XX  
 SQ Sequence 25 AA;

Query Match 90.8%; Score 139; DB 23; Length 25;  
 Best Local Similarity 92.0%; Pred. No. 5.7e-09;  
 Matches 23; Conservative 0; Mismatches 2; Indels 0; Gaps 0;

Qy 1 CKGKGKPCSTIAYNCCTGSCRSRGKC 25  
 Db 1 CKSTGKSCSRAYNCTGSCRSRGKC 25

RESULT 14  
 ABB96661 ABB96661 standard; Peptide; 71 AA.  
 XX  
 AC ABB96661;  
 XX  
 DT 12-JUL-2002 (first entry)  
 XX  
 DR Omega - conopeptide Mn6.1 propeptide.  
 XX  
 KW Omega-conopeptide; analgesic; anticonvulsant; vasotrophic; cardiant;  
 KW neuroprotective; cerebroprotective; cardiovascular; antiinflammatory;  
 KW antimigraine; antiabetic; tranquiliser; vulnerary; antipsychotic;  
 KW anxiolytic; neurotoxic; voltage gated ion channel; seizure; epilepsy;  
 KW neurological disorder; neurotoxic injury; hypoxia; anoxia; ischaemia;  
 KW stroke; cerebrovascular accident; brain trauma; spinal chord trauma;

KW drowning; suffocation; perinatal asphyxia; hypoglycaemic event; pain;  
 KW migraine; inflammation; cardiovascular disorder; psychiatric disorder;  
 KW psychosis; anxiety; schizophrenia.  
 XX  
 OS conus monachus.  
 XX  
 PN WO200207675-A2.  
 XX  
 PD 31-JAN-2002.  
 XX  
 PR 23-JUL-2001; 2001WO-US23041.  
 XX  
 PR 21-JUL-2000; 2000US-219616P.  
 XX  
 PR 05-FEB-2001; 2001US-265888P.  
 PA (UTAH ) UNIV UTAH RES FOUND.  
 PA (COGN-) COGNETIX INC.  
 XX  
 PT Olivera BM, McIntosh JM, Watkins M, Garrett JE, Shon K;  
 PT Jacobsen R, Jones RM, Cartier GE;  
 XX  
 DR WPI; 2002-257318/30.  
 PT  
 N-PSDB; ABL98920.  
 PT  
 PT voltage gated ion channels e.g. pain, inflammation, neurological or  
 cardiovascular disorders -  
 PS claim 1(c); Page 53; 195pp; English.  
 XX  
 CC The invention relates to isolated omega-conopeptides, nucleic acid  
 sequences encoding them, and propeptide sequences. The activity of  
 the peptides of the invention may be described as, analgesic,  
 anticonvulsant, vasotrophic, cardiant, neuroprotective, cerebroprotective,  
 cardiovascular, antiinflammatory, antimigraine, antidiabetic,  
 tranquiliser, vulnerary, antipsychotic, anxiolytic and neuroleptic.  
 CC Peptides of the invention act by modulating the activity of voltage gated  
 ion channels. They may be used for treating or preventing disorders  
 associated with voltage gated ion channels such as neurological  
 disorders, e.g. seizure (associated with epilepsy), neurotoxic injury  
 associated with conditions of hypoxia, anoxia, ischaemia, stroke,  
 CC cerebrovascular accident, brain or spinal chord trauma, drowning,  
 CC suffocation, perinatal asphyxia or hypoglycaemic events; pain e.g.  
 CC migraine; inflammation or cardiovascular disorders. They may also be used  
 for treating psychiatric disorders e.g. psychosis, anxiety or  
 CC schizophrenia. The analgesic agents of the invention show diminished side  
 effects and toxicity, and are non-addictive. The sequences given in  
 CC records ABB96595-ABB96697 represent omega-conopeptide propeptide  
 sequences.  
 XX  
 SQ Sequence 71 AA;

Query Match 90.8%; Score 139; DB 23; Length 71;  
 Best Local Similarity 92.0%; Pred. No. 1.3e-08;  
 Matches 23; Conservative 0; Mismatches 2; Indels 0; Gaps 0;

Qy 1 CKGKGKPCSTIAYNCCTGSCRSRGKC 25  
 Db 46 CKSTGKSCSRAYNCTGSCRSRGKC 70

RESULT 15  
 ABB9673 ABB9673 standard; Peptide; 25 AA.  
 XX  
 AC ABB9673;  
 XX  
 DT 12-JUL-2002 (first entry)  
 XX  
 DR Omega-conopeptide Mn6.1 generic toxin sequence.  
 XX  
 KW Omega-conopeptide; analgesic; anticonvulsant; vasotrophic; cardiant;  
 KW neuroprotective; cerebroprotective; cardiovascular; antiinflammatory;

Search completed: July 1, 2003, 10:51:20  
 Job time: 26.7812 secs

KW antimigraine; antidiabetic; tranquiliser; vulnary; antipsychotic;  
 KW anxiolytic; neuroleptic; voltage gated ion channel; seizure; epilepsy;  
 KW neurologic disorder; neurotoxic injury; hypoxia; anoxia; ischaemia;  
 KW stroke; cerebrovascular accident; brain trauma; spinal chord trauma;  
 KW drowning; suffocation; perinatal asphyxia; hypoglycaemic event; pain;  
 KW migraine; inflammation; cardiovascular disorder; psychiatric disorder;  
 KW psychosis; anxiety; schizophrenia.

OS Conus magus.

XX PH Key Location/Qualifiers

PH Misc-difference 7 Location/Qualifiers

FT FT /label= OTHER /note= "OTHER is Pro or Hydroxy Pro"

FT FT Misc-difference 13 /label= OTHER /note= "OTHER is TYR, 125I-Tyr, mono-Iodo-Tyr or

FT FT /note= "note= "OTHER is TYR, 125I-Tyr, mono-Iodo-Tyr or  
dI-Iodo-Tyr or O-sulpho-Tyr or O-Phospho-Tyr"

XX PN WO200207675-A2.

XX PD 31-JAN-2002.

XX PP 23-JUL-2001; 2001WO-US23041.

XX PR 21-JUL-2000; 2000US-219616P.

XX PR 05-FEB-2001; 2001US-265888P.

XX PA (UTAH ) UNIV UTAH RES FOUND.

PA (COGN-) COGNETIX INC.

XX XX New omega-conopeptides useful for treating disorders associated with

PT voltage gated ion channels e.g. pain, inflammation, neurological or

PT cardiovascular disorders -

XX XX

PS Example 2: Page 52; 195pp; English.

XX CC The invention relates to isolated omega-conopeptides, nucleic acid  
 CC sequences encoding them, and propeptide sequences. The activity of  
 CC the peptides of the invention may be described as, analgesic,  
 CC anticonvulsant, vasotropic, cardiot, neuroprotective, cerebroprotective,  
 CC cardiovascular, antiinflammatory, antimigraine, antidiabetic,  
 CC tranquilliser, antipsychotic, anxiolytic and neuroleptic.  
 CC Peptides of the invention act by modulating the activity of voltage gated  
 CC ion channels. They may be used for treating or preventing disorders  
 CC associated with voltage gated ion channels such as neurological  
 CC disorders, e.g. seizure (associated with epilepsy), neurotoxic injury  
 CC associated with conditions of hypoxia, anoxia, ischaemia, stroke,  
 CC cerebrovascular accident, brain or spinal chord trauma, drowning,  
 CC suffocation, perinatal asphyxia or hypoglycaemic events; pain e.g.  
 CC migraine; inflammation or cardiovascular disorders. They may also be used  
 CC for treating psychiatric disorders e.g. psychoses, anxiety or  
 CC schizophrenia. The analgesic agents of the invention show diminished side  
 CC effects and toxicity, and are non-addictive. The sequences given in  
 CC records ABB96698-ABB96806 represent omega-conopeptide generic toxin  
 CC sequences.

XX Sequence 25 AA:

Query Match 88.9%; Score 136; DB 23; Length 25;  
 Best Local Similarity 92.0%; Pred. No. 1.2e-08;

Matches 23; Conservative 0; Mismatches 2; Indels 0; Gaps 0;

Qy 1 CKGTGKPCSRAYNCCCTGSCRSGKC 25

Db 1 CKGTGKXCSRAXNCCCTGSCRSGKC 25

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